The importance of aesthetics on customers' intentions to purchase smartphones

By

Samrand Toufani

A thesis submitted for the Degree of

Doctor of Philosophy

University of Western Sydney

Nov 2015

I dedicate this thesis to Dr. John Stanton, my supervisor, for his constant support and my parents, for their unconditional love.

Acknowledgment

First, I want to thank my supervisors Associate Professor John Stanton and Dr. Tendai Chikweche. It has been an honour to be their Ph.D. student. They have been actively interested in my work and have always been available to advise me. The joy and enthusiasm they have for their research was contagious and motivational for me, even during tough times in the Ph.D. pursuit. I am very grateful for their patience, motivation, enthusiasm, and immense knowledge.

I also would like to thank the University of Western Sydney for recognizing my research potential and making it possible for me to do my studies.

I cannot forget the valuable conversation and suggestions of Professor Geoffrey Soutar. I have often looked towards him for his valuable suggestions, and he always helped me whenever I needed support in my research.

I especially thank my mum, dad, brother and sister. My hard-working parents have sacrificed their lives for my siblings and myself and provided unconditional love and care. I love them so much, and I would not have made it this far without them. Saman and Sargol, my siblings, have been my best friends all my life and I love them dearly. I know I always have my family to count on when times are rough.

I will miss Barbara Pinning and thank her for her hard work. I like to think of her as the guardian angel of PhD students.

I would also like to thank Kaylene Bailey for her everlasting encouragement and support.

Special thanks to Edwina Harvey for editing my thesis. Without her support, I could not finish writing my dissertation.

Also, my gratitude goes to my friend and roommate Lars Worring who patiently corrected my thesis.

Above all, I owe it all to Almighty God for granting me the wisdom, health and strength to undertake this research task and enabling me to reach its completion.

Samrand Toufani

Statement of Authentication

I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

I also certify that the thesis has been written by me and that any help that I have received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

Samrand Toufani

Table of Contents

List of Tables

List of Figures

Abstract

This thesis examines how an aesthetic appreciation of a smartphone influences perceived value and purchase intention. A review of the aesthetics, perceived value and purchase intention literature helped in shaping two key issues:

1. What are the physical attributes of aesthetics?

2. How does aesthetics influence purchase intention?

To investigate these questions and drawing on the available literature, a model is developed that helps explain how aesthetic appreciation of an object formed from different dimensions of value perceived by viewing a smartphone with these aesthetic properties, influences customers' purchase intention.

The research design used mixed methods led mainly by a quantitative approach. The first research phase was exploratory, involving a focus group with respondents from different age groups in Australia. Analysis of the transcribed data was used to refine the theoretical framework of this thesis. In the second stage, a survey methodology was employed. Initially, a pilot study was undertaken with 65 respondents from different age groups who were volunteer UWS students and /or employees. Results from the pilot study were used to revise and rephrase measurement items. Following the pilot study, the main study was undertaken by recruiting an online panel of 415 respondents in Australia. Data were analysed and hypotheses were tested using partial least squares structural equation modelling techniques (PLS-SEM).

The findings of this research address the central research questions. Firstly, shape, colour, design and touch were found as the four different criteria of aesthetic measurement of a smartphone. The findings for the second research question showed

that while aesthetics can have a direct link with purchase intention, it cannot be a strong determinant of purchase intention. In addition, for a growing array of fairly standardised technology products such as smartphones, functional value is no longer the only determinant of purchase intention. Customers no longer rely on functional attributes of a smartphone as a criterion that influences their purchase intention. However, the use of social value as a mediator in the link between aesthetics and purchase intention could lead to purchase intention. Aesthetics could explain more than 60% of the variance in purchase intention. Findings from this study showed that approval from a person's social network of an aesthetically pleasing object increases the likelihood of purchase intention. Following social value, emotional value was found as the second determinant of purchase intention and a mediator that increases the possibility of intention to purchase an aesthetically pleasing object.

The primary contribution arising from this study is the development and testing of a multidimensional concept of aesthetics, which is then used to verify two alternate paths by which aesthetics can influence consumer purchase intention. This finding strengthens the argument that, for a growing array of relatively standardised technology products such as smartphones and tablets, aesthetics has become an important criterion by which consumers evaluate and differentiate between product and service offerings to make purchasing decisions (Jordan, Thomas & McClelland 1996; Kalins 2003; Postrel 2003). The study concludes that aesthetics can impact purchase intention directly, but the effect is stronger when mediated by different dimensions of value customers may perceive by viewing an aesthetically pleasing object. Only a handful of studies (e.g., Swilley 2012; Cox & Cox 2002; Stich 2004; Lam & Mukherjee 2005) have viewed aesthetics as a construct and there is a paucity of research about how aesthetics can influence different components of perceived

value and purchase intention for a product with mainly utilitarian attributes. An online panel was used to collect data for this study. This involved the identification and explanation of all steps to ensure the quality of the data gathered. Accordingly, the other contributions of this study are the guidelines for future researchers who might be interested in using an online web-based survey for data collection. The guidelines provide a framework for assuring the validity and reliability of the responses.

Chapter 1

Introduction

1.1. Introduction

The scope of this thesis is to examine how aesthetic appreciation of a smartphone influences perceived value and purchase intention. Section 1.1. outlines the background and motivation for this research. Section 1.2. presents the research problems and identifies and formulates the research questions in order to achieve the objectives of this study. Next, the methodology is briefly discussed in section 1.4. followed by section 1.5., which explains the way that the data were analysed. The scope of this research is discussed in section 1.6. and an outline of the thesis organization follows in section 1.7. Finally, the intended contribution is summarised in section 1.8.

1.2. Introduction and Background to the research

Isaacson (2011), in his biography of Steve Jobs, captures Job's preoccupation with product design, appearance and feel of Apple products that at times led to a misfit between the product and its intended target market. While this focus on the key elements of aesthetics may ultimately have served Apple well, the reasons why consumers may vary in their aesthetic appreciation of an object, as well as the process by which this appreciation may influence purchase intention, are subject to dispute.

The intent of this study is to understand how and to what extent aesthetics influences purchase intention in the product category of smartphones. As a secondary aim, this study investigates what the attributes of aesthetics are. A full examination of all possible antecedents, including factors such as cultural differences, is excluded in order to limit the scope of the study.

Aesthetics (Berlyne 1974; Hassenzahl 2008; Cyr, Head & Ivanov 2006), is potentially an important measurement for consumers to evaluate and differentiate among product offerings and to make purchasing decisions (Meyers-Levy & Zhu 2010). Aesthetics is used in reference to either a sensitivity to beauty or to the branch of philosophy that provides a theory of the beautiful and the fine arts (Venkatesh & Meamber 2006). Throughout much of the work conducted in disciplines that have focused on aesthetics, a 'philosophy of art' definition has been linked with the term aesthetics, which has resulted in some debate among consumer researchers regarding a suitable definition of the aesthetic aspect of consumption. Some in the field prefer to apply aesthetic experience only to so-called 'artistic' or 'cultural' products, while others acknowledge that virtually any product can be appreciated in an aesthetic sense (Holbrook 1981; Olson 1981). The latter provides a more useful perspective for understanding the role of aesthetics in consumer behaviour and reflects the idea that "aesthetics is certainly concerned with the arts, but it is not confined to the arts" (Berlyne 1974, p. 1).

While the importance of aesthetics when choosing a product has gained research attention (Charters 2006), little research has been done on how it influences the purchase of products with both utilitarian and hedonistic attributes; that is, products valued for both their functional usefulness as well as their emotional and social value (Hoyer & Stokburger-Sauer 2012). To understand the importance and impact of aesthetics in this category of product, I chose smartphones as an exemplar of a product that displays not only both utilitarian and hedonistic characteristics (Swilley 2012), but may also become a part of the fashion and personal expression of buyers (Katz & Sugiyama 2006). Australia has high smartphone penetration (67%), which means that more than two-thirds of Australians own smartphones. They have purchased at least one previously, are familiar with this device and know how to use them (Australian Communications and Media Authority 2011). Therefore, Australia is chosen as a suitable country in which to conduct the research. The findings of this research should be highly relevant to suppliers, given the high rate of penetration and growth.

After determining an appropriate definition of aesthetics and the nature of aesthetic appreciation, the next step is to find out how to measure it. There is a paucity of research on the attributes of aesthetics in a broad range of products encompassing the middle ground of the aesthetic continuum, where products may be high in both utilitarian and hedonic attributes (Swilley 2012; Hoyer & Stokburger-Sauer 2012). Therefore, a framework is needed in order to provide a measurement by which aesthetic appreciation can be evaluated systematically. After a review of available frameworks to assess contributing sources to aesthetic appreciation, Swilley's (2012) approach is adapted. It comprehensively covers the middle ground of the aesthetic continuum in which products are likely to be sought for both utilitarian and hedonic value. In the framework, all the variables relate to the physical attributes of a product and draw on two senses, sight and touch, enabling a focus on characteristics such as colour, design, overall appearance, texture/touch and shape. These are validated by further research, such as for colour (Wehmeyer 2008) and shape (Cox & Cox 2002).

In contrast, other studies have focused on specific areas like shape (Cox & Cox 2002). However, Swilley (2012) conceptualises aesthetics in a reflective manner, which is problematic for two reasons. First, indicators in reflective models should be interchangeable (Jarvis, MacKenzie & Podsakoff 2003), but shape, touch, colour and design as components of aesthetics are unique and not interchangeable. Second, there should be a covariation among the indicators in reflective models (Jarvis, MacKenzie & Podsakoff 2003); however, there is no theoretical argument that indicators of shape or colour should correlate to each. Therefore, a formative approach to aesthetic appreciation is used.

An individual's assessment of an aesthetic object may have no direct influence on their decision to buy. A product can be aesthetically pleasing, although a customer may not like it (Dickie 1971), or may even appraise it without any intent to buy (Charters 2006). Respondents may gain a value by appreciating an aesthetically pleasing object, which may lead them to purchase intention. Perceived value is not only a strong predictor of behavioural intention, but also an outcome of marketing activities (Cronin, Brady & Hult 2000). It is an important antecedent influencing consumer purchase intention with higher perceived value linked to

stronger purchase intention (Monroe & Krishnan 1985). Sweeney and Soutar (2001) define perceived value as a customer-perceived preference for the evaluation of product attributes, attribute performance and with consequences in terms of the purchaser's goals and purposes.

Researchers have used two different scales to evaluate perceived value: unidimensional and multidimensional (Sweeney & Soutar 2001). The multi-dimensional approach is more appropriate for evaluating shopping habits of consumers (Sweeney & Soutar 2001), but when it comes to the visual appeal of products, the socio-psychological aspects of consumption (hedonic and social) may be as important as utilitarian (functional) aspects (Kempf 1999). Among different multidimensional frameworks measuring customer perceptions of the value of consumer goods, PERVAL (Sweeny & Soutar 2001), was adapted. The widely used dimensions of perceived value (functional, social and emotional value), capture both hedonic and functional attributes of value respondents may gain by viewing an aesthetically pleasing item. The PERVAL framework has been used for different categories of durable goods and in both pre-purchase and post-purchase contexts (Walsh, Shiu & Hassan 2014). Selecting a framework for measuring value, the researcher can find out what dimension of perceived value has significant impact on the relationship between aesthetics and purchase intention.

1.3. Research issues and aims

This study develops and tests a framework to investigate the research problem of how aesthetics influences purchase intention. Thus, the focus is on aesthetics and whether it associates directly with purchase intention or through different forms of value perceived by potential purchasers. Examination of these alternative paths between aesthetic appreciation and purchase intention is currently lacking. Drawing from the literature review to follow, the two main research issues for this study are:

1. What are the physical attributes of aesthetics?
2. How does an aesthetic appreciation of an object affect purchase intention?

The aims of this study are to investigate:

1. The attributes of aesthetics for smartphones.
2. Whether aesthetic appreciation has stronger direct or indirect links with purchase intention.
3. Whether the influence of aesthetics on perceived value is through single or multiple sources of perceived value.

Different factors of perceived value will be used to understand how potential users of smartphones follow different processes and reflect on aesthetics before they make a decision to purchase and use these products. The issues and aims of the study will be achieved through an in-depth investigation of the following research questions outlined in table 1.1.

Table 1.1. Research questions and hypotheses

Research Issues	Hypotheses
R1. What are the attributes of aesthetics?	
R2. How do aesthetics influence purchase intention?	
R2.1. Does aesthetic appreciation of a smartphone have a direct link with purchase intention?	H_1: Aesthetics has a positive and direct impact on purchase intention.
R2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via functional value?	H_2: Functional value is a mediator between aesthetics and purchase intention.
R2.3. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via social value?	H_3: Social value is a mediator between aesthetics and purchase intention.
R2.4. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via emotional value?	H_4: Emotional value is a mediator between aesthetics and purchase intention.

1.4. Justification for this research

This study is justified on the following basis:

- Rapid growth in the use of aesthetics as a source of competitive advantage
- Gaps in the relevant literature
- Benefit for managers

Aesthetics (Berlyne 1974; Hassenzahl 2008; Cyr, Head & Ivanov 2006), is potentially an important dimension for consumers to evaluate and differentiate among product offerings and make purchasing decisions (Meyers-Levy & Zhu2010). It has become a critical success factor for marketing and sales success (Bloch 1995; Miller & Adler 2003). For a growing array of fairly standardised technology products such as smartphones and tablets, aesthetics has become an important criterion by which consumers evaluate and differentiate between product and service offerings to make purchasing decisions (Jordan, Thomas & McClelland 1996; Kalins, 2003; Postrel 2003). Thus, researchers in psychology, marketing and even philosophy, have focussed on what makes an object aesthetically pleasing, attractive or beautiful to the beholder (Berlyne 1971; 1974; Bloch 1995; Martindale 1988; Veryzer & Hutchinson 1998).

Despite the richness of the literature on aesthetics, only a limited number of studies have researched the factors influencing aesthetic appreciation of a product (Hoyer & Stokburger-Sauer 2012; Baisya & Das 2008) and the role of aesthetics on purchase decisions (Turel, Serenko & Bontis 2010), especially for products that have a high degree of utility.

There is a gap in the current literature concerning whether purchasers of personal-use, high-level utility goods have an aesthetic appreciation of such products that strongly influences their purchase intention. Thus, the purpose is to ascertain whether aesthetic appreciation is associated directly with purchase intention or through different forms of value perceived by potential purchasers.

Finally, this research is justified on the basis of its potential benefits for smartphone manufacturers in terms of understanding what aesthetic attributes of an object are more important for customers and how these can be promoted to their

target markets.

Results from this study can assist the development of guidelines for managers in terms of a more efficient evaluation of which aesthetic attributes of a product have a high degree of utility. The researcher will seek to clarify how aesthetics act to influence buyer intentions to purchase. Although customers may care about the use of products, they may be more concerned about the aesthetics benefits of a product (Bloch, Brunel & Arnold 2003). Such market conditions suggest the need for marketers to explore all dimensions of customer value before choosing their appropriate marketing approach.

1.5. Methodology

This section introduces the methods which were used for data collection and analysis. Chapter 3 will provide the details of data collection and analysis. This thesis makes use of both qualitative and quantitative methods across two phases. Since the research was seen as "unfamiliar" (Zikmund 2003, p.120) and little was known about the overall situation (Malhotra, Birks & Wills 2012), I conducted a focus group to gain insights and ideas on the central concepts of the study. In the first phase of data collection undertaken, a focus group was made up of eight participants from different age groups and education backgrounds as representative of the proposed sample. Participants were asked about proposed questions for the questionnaire including the language used, the focus of each question and suitable phrasing to avoid ambiguity in how to respond. The questionnaire developed used the five-point Likert-type scales (ranging from 1= strongly disagree to 5= strongly agree). The measurement items were adapted from previously validated scales, although the wordings of the measurement items were changed slightly to match the context of the study in the thesis and the concerns of the focus group.

The second stage of the research study consisted of a pilot study followed by an online survey as part of the primary data collection. The pilot study was undertaken to ensure word clarity and understandability, to check the time required to complete the questionnaire and to address any comments or suggestions respondents had. The pilot survey was distributed by drawing from a large online

consumer panel subsequently used for the final study. The pilot study resulted in 64 respondents. That study also allowed space for further comment by interviewees. Taking all feedback into account, a revised survey instrument was prepared for the primary survey.

In the final stage, excluding the pilot respondents, a selected online consumer panel was provided access to the survey site resulting in 415 fully completed responses. A web-based approach was used because web-based surveys provide easy access to various groups of respondents (Evans & Mathur 2005). The online approach allowed monitoring of completion times; systematic progression through each part also simplified the importation of data into a statistical package (Granello & Wheaton 2004).

1.6. Data analysis

Data preparation was the first stage in the analysis section. Data were screened for missing information before conducting a variance based Structural Equation Modelling analysis. Next, the proposed hypotheses were tested using a two-stage approach (Chin 2010), in Warp-PLS 4.0 software. The objective of the first stage was to specify the causal relationships between the manifest variables (or observed indicators) and the underlying theoretical constructs. The goal of the second phase was to test the proposed hypotheses postulating the relationships between the constructs. The model fit was determined through several criteria that included the effect size, path coefficient, coefficient of determination and predictive relevance.

1.7. Scope of this research

This study is confined to investigating the impact of aesthetics on purchase intention among Australian citizens older than 18 years old. To ensure that all respondents had experience in using smartphones, only those who had bought smartphones were included in the sample. In order to understand the value consumers perceive in aesthetically pleasing items, unrelated to retail prices of smartphones in Australia and decisions ultimately made when prices are necessarily

taken into account in the context of a person's budget, price is excluded from the research scope.

Furthermore, customers may use brand names as signals of quality and use brand attributes as their criteria to distinguish between products (Walsh, Shiu & Hassan 2014). In order to try to exclude any brand effects, I excluded the role of brand on purchase intention. The aims were to free respondents from focusing on a preferred brand and instead have them concentrate on what they valued in a smartphone. Future research can investigate whether brand association and involvement can affect the relationship between aesthetics and purchase intention.

Obtaining a direct measure of purchase behaviour is problematic (Gilbert, Fiske & Lindzey 1998). In this case, the researcher would need to find out where these at least 400 respondents may buy their products and see whether they commit to purchase. Participants might give a wrong response because they may not want to concern themselves with the researcher's study, or because they want to give the response the researcher expects (Gilbert, Fiske & Lindzey1998, p.120). Therefore, purchase intention was used to measure the likelihood that an individual would purchase a particular smartphone (Nysveen, Pedersen & Thorbjørnsen 2005) instead of the actual purchase. It is the antecedent of actual behaviour (Lee & Trail 2012).

1.8. Outline of the thesis

This chapter provided a background to the research topic and gave an overview of the entire study. Chapter 2 reviews the relevant literature focusing mainly on aesthetics, perceived value and purchase intention and highlights the role of different dimensions of perceived value as determinants of purchase intention. Further review suggests that the link between aesthetics and purchase intention has not been widely studied or verified. This chapter concludes by outlining the main research problems and the corresponding hypotheses. It discusses the four hypotheses to be analysed. H_1 relates to the direct impact of aesthetics on purchase Intention. H_2, H_3 and H_4 are associated with the role of dimensions of perceived value as mediators in the link between aesthetics and purchase intention. These dimensions are functional, social and emotional.

Chapter 3 covers the research methodology used to examine the proposed hypotheses. This methodology justifies the primary use of quantitative methods. Further, this chapter discusses the measurement scales and items used to measure the proposed constructs and the instrument to collect the data. Following this is an elaboration of the pilot study and final survey, justification of the data analysis methods and software used to analyse the data. Chapter 4 presents the results of data analysed using the techniques discussed in Chapter 3. Using a two-stage approach I use Warp-PLS, version 4.0 to answer the research questions and test proposed hypotheses. Warp-PLS 4.0 software performs the analysis of both stages simultaneously and provides reports regarding the acceptance or rejection of hypotheses, which are interpreted according to acceptable standard rules. Chapter 5 interprets the results from investigating the four proposed hypotheses. Theoretical and managerial applications are reported. Chapter 5 also discusses the contribution of the thesis. Limitations of the thesis and recommendations for future research are also provided in this chapter.

1.9. Conclusion

This chapter provided background information on the emerging concept of aesthetics, outlining justification for using it. The chapter has justified the need for this research by identifying research objectives and questions in two major areas of understanding: What are the physical attributes of aesthetics and how does an aesthetic appreciation of an object affect purchase intention? The scope and outline of the dissertation has also been provided.

Chapter 2

Literature review and hypotheses development

2.1. Introduction

The primary purpose of this research is to examine how aesthetics influences customers' purchase intention. Thus, the aim of this chapter is to review and link the literature in three main areas: aesthetics, perceived value and purchase intention. This discussion will then act as a basis for the development of a theoretical framework proposed at the end of this chapter. This chapter is divided into four core sections as shown in figure 2.1. The first section gives the background of aesthetics; the second part describes perceived value and its framework. The third section is devoted to the importance of purchase intention and its description while the last is devoted to the research gap, questions and objectives. Figure 2.1. also illustrates the arrangement followed in this chapter for reviewing relevant topics.

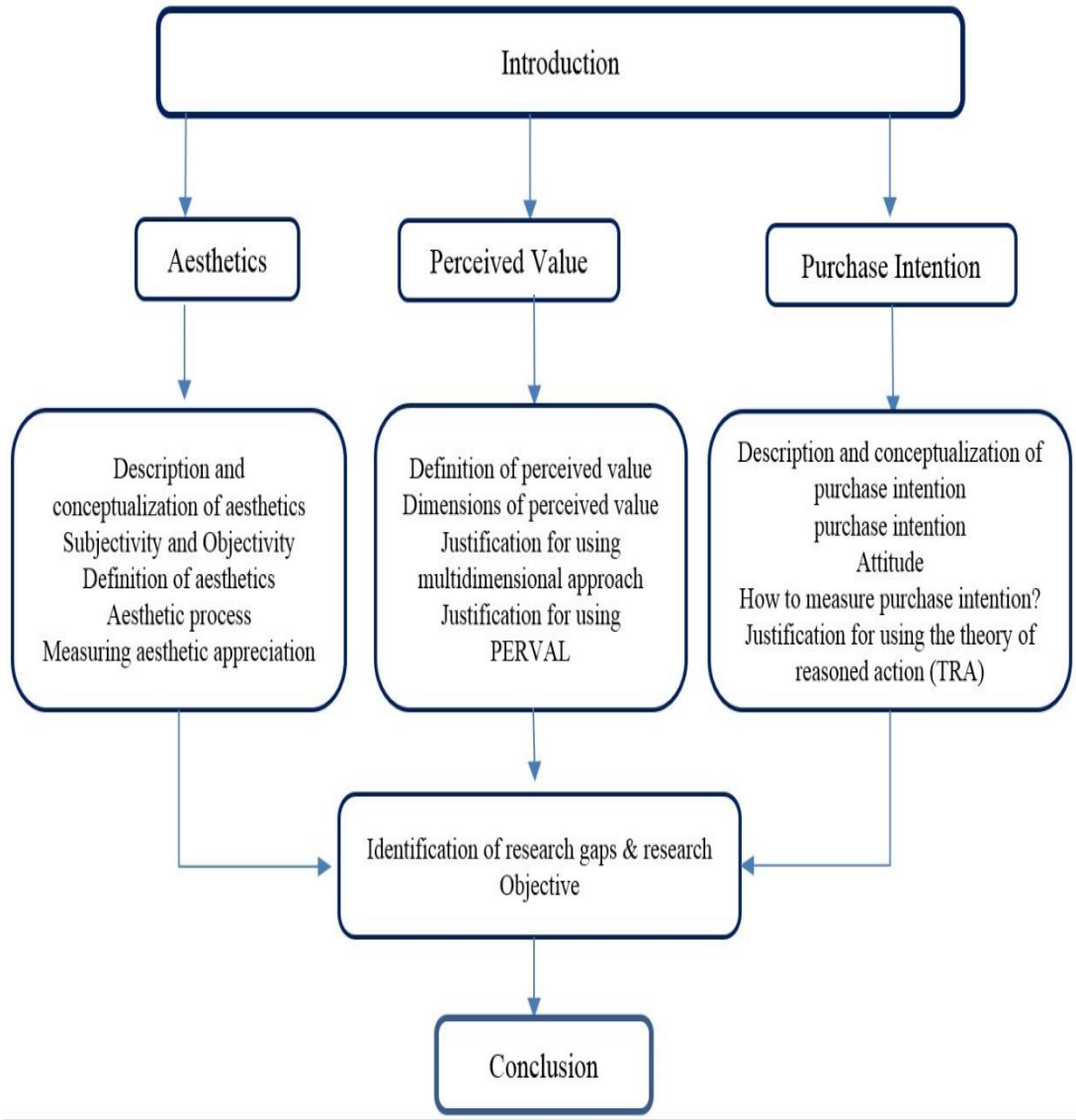

Figure 2.1. List of sections included in chapter 2

2.2. Parent theory one: Aesthetics

This section focuses on examining the purposes and intended effects of aesthetics. To lay the foundation for the definition of aesthetics in this study, the literature about aesthetics is reviewed. The review revealed that there are three schools of thought that define aesthetics in different ways. The review also revealed that studies about the definition and description of aesthetics are ongoing and there is no established theory regarding how aesthetics can influence purchase intention.

In view of this, the scope of the study was limited on how aesthetics influences purchase intention in order to tackle the gap in the research. This section has been further divided into 15 sub-sections. The first part introduces the broader concept of 'aesthetics' (figure 2.1.). It is then followed by reviewing its definition via different groups of thoughts. Explanations of the nature and definition of two different groups of thought is given in section 2.2.2. In order to justify which way of thinking about aesthetics is more appropriate to follow.

Additionally, to find out how processing of aesthetics is viewed, two different approaches are explored: the exploratory and experimental viewpoints (section 2.2.4.). Next, justification is made for using an exploratory approach. Further, different measures used for evaluating aesthetic appreciation of an object are reviewed. Justification of the framework selected is made at the end.

2.2.1. Description and conceptualization of aesthetics - revisiting the concept

First impressions can shape our judgment and choice preference and push us to look for added information regarding a product. Visual appearance is one of the sources of first impression (Tractinsky, Shoval-Katz & Ilka 2000). It can be influenced by not only the aesthetics of nature and architecture (Porteous 1996), but also by the beauty of everyday objects and artefacts (Postrel 2003; Coates 2003). The immediate effect on our senses and our judgment could be a reason for aesthetics to have a major role in everyday life (Tractinsky et al. 2006). Aesthetics has changed meaning over time from a narrow interpretation, purely concerned with the fine arts, to become very much an extended postmodern phenomenon (Cova & Svanfedt

1993). Compared to the past when aesthetics was perceived mainly in the context of art, now it is present in all facets of life (Welsch 1996). We care about the aesthetics of our houses, beauty of our cars, digital products such as smartphones and prefer to go to shops with a carefully designed "total shop experience".

While the word beauty refers to attractiveness and can have different facets such as cute, elegant, sexy (Solomon, Ashmore & Longo 1992), 'aesthetics' is usually used in reference to either a sensitivity to beauty; or to the branch of philosophy that provides a theory of the beautiful; and of the fine arts and concerns with the nature and appreciation of art, beauty and good taste. Blackburn (1994) views the "presence or absence of beauty" as the core of aesthetics (Levy & Czepiel 1974, p.387). However, compared with beauty, which looks for a positive response, aesthetics encompasses any of an individual's reaction to works of art or entertainment, whether positive or negative (Dickie 1997).

From its Greek language origin, 'aesthetics' means 'pertaining to sense perception' (Veryzer 1993). As such, aesthetics is not only about visual appearance but also about other senses such as touch and taste. Aesthetic appreciation is understood as "the enjoyment of beauty or novelty when an individual appreciates a work of art" (Wang et al. 2013, p.41).

According to Beardsley (1969), aesthetic experience is an emotional reaction to some aesthetic features. In order to understand an individual's evaluation of aesthetic values from a work of art, aesthetic judgment was proposed by Kant, the German philosopher who viewed aesthetics as a unitary and self-sufficient type of human experience (Fenner 2003). Aesthetic judgment put beautifulness as the value of an object (Prall 1929) which was free from utilitarian, social inference and interest (Goldman 1995; Dickie 1997). Beautifulness is made via interrelations among all the components of an object in a work of art and not by the elements individually (Goldman 1995). In addition, fun, humour, wisdom and creativity were also used as a source of value. However, other researchers such as Pepper (1938) used quality as the value of an object. It is different from artistic judgment in a way that aesthetic judgment criticizes and appreciates any object and not only art, while artistic judgments only appreciates or criticizes the work of art (Dickie 1997).

"Aesthetic" is different from "hedonic" in the way that the aesthetic response, the consumer's appreciation of beauty (Wagner 1999), is cognitive, affective and sensory (Wagner 1999), whereas hedonic is affective, "being essentially about pleasure" (Charters 2006, p.240). As an element of aesthetic appreciation, "pleasure almost certainly leads to a hedonic response—but the two are not identical" (Charters 2006, p.240). For example, I can look at a piece of art and perceive the beauty of its symmetry, the way the figures in it are arranged in a pleasant way, and how the ornate frame adds to the overall attraction. That constitutes aesthetic appreciation, whereas hedonic reaction is when I look at the piece of art and perceive and enjoy it without consideration as to why.

Also, philosophers have different views of the nature of aesthetics. Some view it as subjective which consider aesthetics as individual perceptions of aesthetic value (Osborne 1968). Thus, different people can make different aesthetic judgments based on the influence of their culture, social class, personal preferences, learned experiences and current emotions (Wolff 1993). I will look at different schools of thought (subjectivism, objectivism and combination of both methods) in describing beauty and aesthetics and explaining why aesthetics became a unique property of an object.

2.2.2. Subjectivism, Objectivism and a Combination of both methods

There are three main groups of thought describing aesthetics in different ways: subjective, objective and a mix of both subjective and objective (table 2.1.). Some view an individual's appreciation of beauty as subjective, whereas others believe it is objective, with universal elements that make an object beautiful to all people. A third approach taken by some scholars, which offers a middle ground, is to not only use subjectivity to measure beauty, but also use the general principles of aesthetics that are uniform in nature as a base to describe an aesthetically pleasing object. I will continue to investigate these groups of thought further in this thesis.

Table 2.1. Different descriptions of aesthetics

Era	Scholar	Subjectivity	Objectivity	Combination of both Subjectivity and Objectivity
Classical Age	Pythagoras (c.580–500 BC)		Harmony, among other features of things, constitutes beauty. Harmony is made of order, order from proportion and the proportion from measure and measure from number (Tatarkiewicz 1963).	
	Plato (428 B.C)		Beautiful objects integrate proportion, harmony and unity among their parts (Tatarkiewicz 1963).	
	Aristotle (384 B.C)		Measurability of art comes from the idea of its capability to provide knowledge. Order and symmetry are the universal elements of beauty (Herwitz 2008).	
	Zeno (334 B.C)			For different individuals, different things are beautiful. (Dickie 1997). Also, proportion could be a measure of beauty of an object (Dickie 1997).

Era	Scholar	Subjectivity	Objectivity	Combination of both Subjectivity and Objectivity
	Vitruvius (70-15 BC)		By using “additions” and “subtraction” to adjust the symmetry, beauty can be more pleasant (Herwitz 2008).	
	St.Augustine (354-430 AD)		Unity, equality, number, proportion and order can be elements of beauty. They are eternal and representative of beauty of God in forms (Tatarkiewicz 1963).	
	Pseudo-Dionysius (writing before 532AD)		Beauty is the source of all things and the cause of harmony and sympathy (Spicher 2010).	
Medieval era	St. Thomas Aquinas (c. 1225–1274)		Perfection or unimpairedness, proportion or harmony and brightness or clarity are the elements of beauty (Dickie 1997).	

Era	Scholar	Subjectivity	Objectivity	Combination of both Subjectivity and Objectivity
18th Century	Hume (1711-1776)	Rules governing beautifulness cannot be intuitively described and can only be empirically established by agreement among all peoples and all ages (Tatarkiewicz 1963).		
	Baumgarten (1714- 1762)		Aesthetics is the study of sensibility as a particular kind of cognition.	
19th Century	Kant (1724-1804)			Aesthetics is the experienced pleasure that results from an aesthetic experience, which varies by individual (Dickie 1997).
	Schiller (1759-1805)	Aesthetics is the perfect balancing of the sensual and rational parts of human nature (Dickie 1997).		
	Schopenhauer (1788-1860)	Aesthetics is the result of being the object of person's aesthetic consciousness (Dickie 1997).		

Era	Scholar	Subjectivity	Objectivity	Combination of both Subjectivity and Objectivity
20th Century	Stolnitz (1925-)			Aesthetics is "disinterested (with no ulterior purpose) and sympathetic attention to any object for its sake" (Stolnitz 1960, p.32).
	Hirschman and Holbrook 1990			Visual appearance is not the only attribute of the product, which influences consumers' aesthetic appreciation of an object. Pleasure made during the appreciation of aesthetics is raised by the power of expression, rather than the power of beauty (Dickie 1997).
	Blackburn 1994			The study of the feelings, concepts and judgments arising from our appreciation of the arts or of the wider class of objects considered moving, or beautiful, or sublime" (Blackburn 1994,

Era	Scholar	Subjectivity	Objectivity	Combination of both Subjectivity and Objectivity
				p.8).
21st Century	Charters 2006			Taste is a personal judgment and aesthetic experience relies on individual emotional response. Some of the general principles of taste or aesthetic pleasure are uniform in nature.

2.2.2.1. Objectivism

Although aesthetics as a branch of philosophy received prominence in the eighteenth century, its description goes back to Plato's era (Cooper, Lamarque & Sartwell 1997). Both Plato and Aristotle thought that the entire universe was formed with geometric shapes, with beauty as the most important part of "ideal forms, mathematical proof and rational deductions" (Herwitz 2008, p.11). Beautiful objects integrate proportion, harmony and unity among their parts and nothing was beautiful without proportion. Thus, aesthetics was an objective property of things and not subjectively determined (Tatarkiewicz 1963).

Order and proportion were called beautiful and useful, while lack of order and proportion were considered ugly and useless (Tatarkiewicz 1963). The objective theory, or the idea of universality of beauty, was predominant in the ancient and

medieval era (table 2.1) and many philosophers from Plato to St. Thomas Aquinas contribute to its description. However, its drawback is it puts beauty outside of an individual's particular judgment and experience. Therefore, for an object to be aesthetically pleasing it should have specific width, height, or even colour, which are not determined by social or cultural factors (Stolnitz 1960) There was not much change in the viewpoint of philosophers about aesthetics until the 18th century (Dickie 1997).

Subsequently, Baumgarten (1714-62), a rationalist, tried to tackle this problem by using sensory faculties to judge the beauty of an object. He adopted the Greek word "aeskesis" which relates to sense perception or the sense experience to make "aesthetics" (Dickie 1997). Thus, aesthetics became a branch of philosophy and the study of sensibility as the cognition of particular things (by use of the five senses) rather than abstract concepts. He thought individuals had a special sense that was responsive to beauty and harmony (Herwitz 2008).

2.2.2.2. Subjectivism

When the main problem of aesthetics changed from the question of "what is beautiful or what is beauty" to " how do we experience it, the subjectivist view gained its ascendancy (table 2.1.). In the eighteenth century, philosophers rejected the idea of objective beauty and proposed the philosophy of taste; that is, beauty can only be perceived by human senses and the taste of beauty is subjective (Dickie 1997). Hence, the study of aesthetics relied on individual aesthetic judgment and aesthetic experience (Osborne 1968). In this view, individual experience is freed not only from impediments made by religion and monarchical control but also from the burden of knowledge. Thus, aesthetics is perceived via sensory faculty alone rather than cognitive senses, such as seeing or hearing and the judgment of beauty is immediate (Dickie 1997).

Hume proposed that since men cannot be certain of anything (Dickie 1997); they have to judge based on their perception or taste to call something beautiful. Thus, judgments concentrate on pleasure as an attribute of the experiencing subject. Since pleasure is not made from cognition of the world external to the subject,

aesthetic judgments are subjective and universal (Dickie 1997). However, Hume's essay, "Of the Standard of Taste," viewed aesthetics both as subjective and objective: objective because the rules governing beautifulness cannot be intuitively described and can only be empirically established by agreement among all peoples and all ages (Dickie 1997). Hume concluded that we do not need to find a reason why an object is beautiful, but rather to use our taste (Shelley 2013).

Kant also thought pleasure in response to beauty is subjective, although he contended that the existence of beauty by which the pleasure is evoked is universal (Dickie 1997). He argued that it was possible to have a priori knowledge deduced by our mind and not made from experience (Dickie 1997). Hence, when something gives one person pleasure, it has to give everybody the same feeling. However, he did not explicate how such agreement could be reached. Kant also assumes that only form, which is universal and necessary because of its priori source, is beautiful. In his view, beautiful objects are called beautiful when their forms (shape, arrangement, rhythms, etc.) are beautiful. Thus, he made a list of predetermined forms that makes an object beautiful.

Kant's view of aesthetics is not suitable for this study because:

1. Kant views beauty in terms of forms and ignores sensible content (colour, tone, etc.,) (Dickie 1997). However, sensible attributes nowadays are described as the most important element of aesthetics that makes it unique.

2. Another problem is that beauty is defined in terms of specific forms. Kant made a list of forms of purpose that are beautiful. However, this list was considered disable to cover all beautiful forms of varying purpose (Dickie 1997). For products with utilitarian purpose, like cars, home appliances, or digital products such as smartphones, that are aesthetically pleasing (Swilley 2012) but much appreciated for their functionality, they are not called aesthetically pleasing because they do not have the forms of purpose covered in Kant's list. For example, the shapes or design of these products are mostly adjusted to make a product pleasing while in Kant's idea such attributes should be more related to the functionality of these products as their main attributes.

Schopenhauer, in his aesthetics-attitude theory, argues that a thing is beautiful because it is an object of a person's aesthetic thought, not because of its form (Shelley 2013). For Schopenhauer, aesthetic consciousness or pleasure is made up of intellect and its ability for aesthetic thought (Dickie 1997). Thus, based on his aesthetic-attitude theory, almost everything is beautiful if aesthetic consciousness is awake in the person (Dickie 1997) and all humans can experience aesthetics. However, like Kant, he maintains that aesthetic consciousness may be made via the cognitive faculties functioning in a non-ordinary way and have as its purpose some spiritual idea; that is, everything that happens in the world is the expression of an underlying cosmic will (Dickie 1997).

Following Schopenhauer, Stolnitz (1960) added disinterest to this theory. Being disinterested means using all the senses to observe objects for their own sake without any kind of personal interest. That is, looking at the beauty of an object per se and not what that object can do for the observer. The aesthetic attitude, 'isolates' the object and focuses upon it—the 'look' of the rocks, the sound of the ocean, the colours in the painting" (Stolnitz 1960, p.35). Stolnitz argues that nothing is inherently unaesthetic and we can adopt the aesthetic attitude to anything. According to his view, when one takes the proper aesthetic attitude toward an object, it appears noble, subtle and beautiful. In this theory, neither art nor nature is inherently more aesthetic than the other is. Therefore, since nothing is inherently unaesthetic, nothing in art is at an aesthetic inferior to anything in nature and vice versa (King 2012).

2.2.2.3. Combination of both subjectivism an objectivism

Since the mid-1980s, along with the postmodern movement, philosophers have continued to argue about how to judge beauty and what the scope of the aesthetic experience is (Dickie 2000; Sibley 2001). Therefore, beauty expanded its meaning from beautiful versus ugly to a broader one (Bouchet 1994; Firat & Venkatesh 1995; Aylesworth 2005). Scholars believe that there is no boundary between life and art (Charters 2006) and aesthetics should move from art to other areas of studies in order to describe aesthetics and aesthetically pleasing items (Dickie 2000). Using the strategies and tools of psychology, for example, helps to understand the human need to produce and experience art (Funch 1997). Also, in

anthropology, ethno-aesthetics is used for the cross-cultural study of art (Van-Damme 1991). It investigates how and what sort of values aesthetics represent in the production and evaluation of art.

However, aesthetics is usually used in marketing to create a competitive advantage in the market and expand market share (Brown & Patterson 2000). Dickie (1997) claimed that pleasure arising during the appreciation of aesthetics is raised by the power of expression, rather than the power of beauty. Thus, the aesthetic concept should be freed from its philosophical roots, becoming a medium to receive reactions from people through their looking and feeling (Postrel 2003, p.5). Based on this viewpoint, the sound of poetry may be called aesthetic but the meaning is not because the former is affective, experienced by an individual's feeling or emotion, while the latter is cognitive and experienced by thinking (Postrel 2003, p. 5).

For post modernism thinking, aesthetic judgment of an object can be achieved via using different senses (Sibley 2001, pp.14-9). Under this view, everyone has his/her viewpoint about aesthetics and there is no discussion or argument about one's taste (Charters 2006). For example, two individuals might have different and distinctive views about whether an object is aesthetically pleasing; however, neither of the two views may be correct. Therefore, there is no agreement in society that one object is more aesthetically pleasing than another (Hoyer & Stokburger-Sauer 2012).

For this school of thought, however, aesthetic taste is not viewed the same as other senses. While it has an important subjective element, it has been argued that aesthetic taste or judgment has to have an objective dimension (Charters 2006). For example, some of the general principles of aesthetic taste like unity, proportion, symmetry or complexity are uniform in nature and are described as some attributes of "good" design (Creusen & Schoormans 2005).

However, this idea of viewing aesthetics as both subjective and objective is not a new concept and goes back to the teachings of St. Thomas Aquinas. While the Stoics followed Plato's objectivity approach, Plato did not deny that judgments about beauty can be irrational and based on impression (Tatarkiewicz 1963).

In general, the streams of thought in various disciplines on aesthetic taste relate to the concept to perception, judgment and aesthetic experience (Charter 2006). This thesis applies the idea of using both the subjective and objective approach that views subjectivity as the main approach chosen to explore people's aesthetic appreciation of an object based on communal principles (the objective dimension of the research). These principles are not universal and are based on individual taste in a specific period. These attributes are found from prior research done in the marketing area. Finding the attributes of aesthetics, I use respondents' beliefs such as whether they accept, for example, colour as a criterion of aesthetics. While there has been considerable debate as to whether there is an external standard for taste and its subjective versus objective basis of assessment, there is no right or wrong taste (Charters 2006).

2.2.2.4. Justification for using Hirschman and Holbrook's View

Reviewing different approaches toward aesthetics (table 2.1.), I use Hirschman and Holbrook's (1982, p.94) view that aesthetics appreciation is made not only from the visual sense (ophthalmoception), but also from touch (tactioception). I will be incorporating these senses when discussing the aesthetic values of the smartphone.

Smartphone designers are concerned with the aesthetics of a smartphone on multiple levels: the design of the smartphone, the feel of it when handled and its quietness while working with different applications as well as the smartphone's interior design such as its CPU and battery (Swilley 2012). They may look at whether smartphones offering coloured screens and superior sound quality are more aesthetically pleasing than ones that do not and whether smartphones that are bright pink are perceived as more beautiful than smartphones with a standard white casing (whether colour plays a role). Thus, in addition to visual aesthetics, sound and touch aesthetics are relevant.

2.2.3. Definition of aesthetics

The considerable impact of postmodernism on marketing thought in the twenty-first century, especially in the area of consumer aesthetics (Charters 2006), is

defined as “incredulity towards metanarratives” (Lyotard 1984, p. xxiv) meaning that we have to review the theories which seek to explain general human behaviour. Finding the traditional repositories of aesthetic quality as “tedious” and “elitist”, scholars in the modern era do not attempt to find general rules governing the appreciation and experience of artworks or aesthetic products (Brown, Hirschman & Maclaran 2000, p.147), unlike past research. Thus, aesthetics has changed its meaning from simply being part of the philosophy of art to the way we communicate through senses (Postrel 2003).

Academic research has used the term aesthetics in two ways: First, to refer to a theory of the beautiful; second, to refer to a person’s sensitivity to the beautiful (Stich 2004). The latter is often described as an individual’s aesthetic sensitivity and is closely related to an individual’s (good) taste (Berlyne 1974; Child 1964; Goetz et al. 1979). Aesthetic sensitivity is defined as “the extent to which a person gives evidence of responding to relevant stimuli in some consistent and appropriate relation to the external standard” (Child 1964, p. 49). Postrel (2003, p.6) defines aesthetics as “the art of creating reactions without words through the look and feel of people, places and things.”

Thus, appreciation of aesthetics is different from entertainment that “requires cognitive engagement with narrative, word play or complex, intellectual allusion” (Postrel 2003, p.5). It is also primarily symbolic, used to stimulate responses in others as part of a company’s public relations or identity (Charters 2006; Goodman 1968). At the simplest level, art forms are seen to employ symbolic devices.

It is also suggested that aesthetic appreciation is widely agreed to have a cognitive or evaluative element to it — with terms such as judgment, contemplation and perception being commonplace (Dickie 1971; Townsend 1997). Like Blackburn (1994), some philosophers would also allow an affective component (Schaper 1983; Funch 1997). For others, aesthetics is only related to high art. For instance, a meal or a bottle of alcoholic beverage would have no aesthetic value for some scholars like Beardsley (Scruton 1979; Beardsley 1981), whereas for others like Douglas it would (Douglas 1982; Gale 1975; Sibley 2001). Psychologists seem to have a less rigid approach to the nature of an aesthetic object (Csikszentmihalyi & Robinson 1990),

but for them definitional issues are secondary to processes. It is not about a profound experience (unlike the philosophical interpretation, which assumes that it will be). This description of aesthetics, using both cognitive and affective elements, tends to minimise the significance of experiences that may be more intense and instead focuses on a more general hedonic experience. Thus, judgments of aesthetic value depend on our ability to discriminate at a sensory level, but they usually go beyond that. They are sensory, emotional and intellectual all at once. Individuals with a sense of aesthetics are described as having "more sophisticated preferences regarding the design of things" (Bloch 1995, p.22) and as having superior consumer preferences (Kates 2001).

Other research has used the five senses to distinguish aesthetic objects from others. For example, Allen, Gupta and Monnier (2008) and Hoegg and Alba (2007) investigate gustatory taste, which is related to the taste of food or beverage and its interplay with visual and verbal cues in product evaluation. Bosmans (2006) investigates the influence of ambient scents on product evaluations and Peck and Childers (2003) study individual differences in haptic information processing. Holbrook (1982, 1999 and 2005) viewed taste more generally as a concept that deals with the judgment of and preference for aesthetic objects and found out that individuals unveil their aesthetic taste using their senses of sight and sound. Thus, aesthetics is not only related to visual aesthetics (due to its obvious relationship with beauty), but also to sense perceptions, that is, to all five senses.

Based on the way the meaning of aesthetics has evolved to encompass all five senses, the following definition can be derived for this study: aesthetics is "the study of the feelings, concepts and judgments arising from our appreciation of objects considered beautiful" (Blackburn 1994, p.8), through any of the five senses (Charters 2006). This kind of appreciation is immediate. Thus, beliefs about the aesthetic attributes of a product are individually determined (Pollay & Mittal 1993).

2.2.4. Aesthetic process

Having settled on a definition of aesthetics and the nature of aesthetic appreciation, the next step is to find out what process an individual takes to perceive

an object as aesthetically pleasing. There are two different groups of studies investigating the process of aesthetics experience: the experimental and exploratory approach.

The experimental approach (Berlyne 1974), or experimental aesthetics, is related to research that experimentally evaluates the influence of an isolated element of an object on human preferences in order to find out general rules of aesthetic qualities that may be found in the evaluated object (Lavie & Tractinsky 2004).

The second group is exploratory research, which looks for finding factors representative of people's perception of the appraised objects. This type of research is based more on subjective perceptions of aesthetics than the objective attributes of things (Lavie & Tractinsky 2004).

2.2.4.1. The experimental approach

An experimental approach uses research-based methods and empirical data to explore rules that control our aesthetic preferences (Hetrick 2011). For example, Fechner used artistic and architectural objective rules such as the golden ratio and other Pythagorean proportions to explore people's preferences (Lavie & Tractinsky 2004).This method is an inductive or bottom-up approach in order to gain the result. Berlyne (1974), for instance, believes that the only way to understand aesthetics is by isolating and manipulating attributes or characteristic (e.g., simplicity and interestingness) of works of art and evaluating their effects on the observers' preferences (Martindale, Moore & Borkum 1990; Swede 1994). Berlyne (1974) looked for general principles to identify specific or general aesthetic criteria.

Although following an experimental approach is a way to measure and define beauty, there is doubt on the generalization of this method (Boselie 1992; Swede 1994) which focuses on the importance of perceiving the beauty of isolated elements instead of the whole (Arnheim 1992). When judgment is based on isolated elements of an object, it is impossible to deduce that the whole thing could be more beautiful than its individual elements since the whole may sometimes exceed the sum of the elements (Osborne 1968; cited in Lavie & Tractinsky 2004).

2.2.4.2. The exploratory approach

The exploratory approach relates to an individual's judgment rather than to the objective properties of stimuli (Lavie & Tractinsky 2004). This approach uses factor analysis techniques to obtain an individual's perceptions of the objects of interest. Pickford (1972), found factors influencing aesthetic preference that related to emotional expression, harmony of design and harmony of colouring. Ostendorp and Berlyne (1978) found design, clarity, hedonic tone/arousal, complexity and familiarity as five important aspects of architectural styles used from ancient Egypt to the modern era that could influence aesthetic judgment. Likewise, Nasar (1988) considers visual richness (e.g. ornateness, colourfulness and complexity), openness (vs. closeness) and clarity (vs. ambiguity) as factors of aesthetic design for residential street scenes.

2.2.4.3. Justification for using exploratory approach

In this research, I am looking at how people judge stimuli rather than about the objective aesthetic properties of stimuli. The aim is to ascertain when respondents find an object aesthetically pleasing or when the combinations of different elements such as shape, colour and design of a product are perceived as meaningful and which attributes of aesthetics make this item aesthetically pleasing. This requires exploring potentially relevant factors such as aesthetic attributes of a particular product.

The exploratory approach was chosen here because to follow an experimental approach would require the researcher to place participants in controlled conditions where their reactions to objective attributes of stimuli can be recorded and analysed, requiring laboratory facilities and more time, and these resources were unavailable. In addition, when judgment is based on isolated elements of an object, it may not be possible to deduce that the whole thing could be as beautiful as its individual elements (Osborne 1968). Therefore, the aesthetic appraisal of total object cannot be measured by experimental aesthetics methods.

2.2.5. Measuring aesthetics

In this section the literature is appraised in order to find an appropriate criteria to measure aesthetics. Although many products contain both hedonic and utilitarian elements, some are richer in one or the other element. Figure 2.2 shows the aesthetic dimension in products along a continuum (Charters 2006). While aesthetic appreciation of music or a painting may be a primary motive for its purchase and consumption, shifting away from this extreme of purely "aesthetic products", the aesthetic component is likely to diminish in importance. Durable products with a high utilitarian purpose such as smartphones, PCs and tablets can also be designed to be aesthetically pleasing (Swilley 2012). In these cases, the potential influence of aesthetics on purchase intention is unclear. Referring to Figure 2.2, these products can occupy a space anywhere between the minimal aesthetic design and almost entirely aesthetic poles.

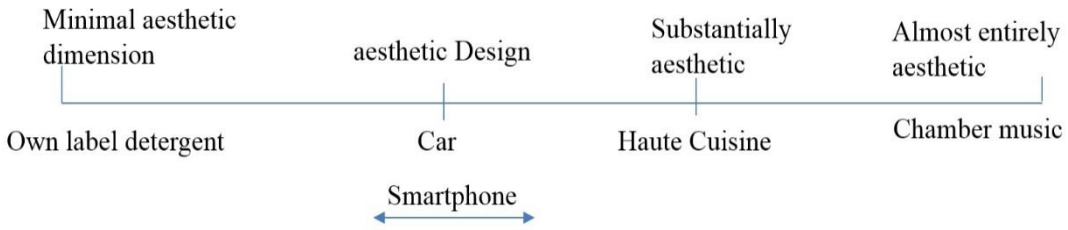

Figure 2.2. The extent of aesthetics in consumer goods (source: Charters 2006)

Empirical research has addressed mechanisms to 'measure' aesthetics (Hassenzahl 2008). In order to measure aesthetics, I have chosen smartphones as an exemplar of a durable product that displays both utilitarian and hedonistic characteristics (Brunner, Emery & Hall 2008; Swilley 2012). Customers may look for more than one value when they have to choose a product among many in the same product line (Sweeney & Soutar 2001). For example, they look into non-instrumental features of products to see if these attributes can express their personal feelings and increase their social inclusion (Katz & Sugiyama 2006).

Using smartphones as the focus of this thesis will further understanding of the components of value that drive individuals to purchase durable products that

have both hedonic and functional attributes. The literature is unclear whether aesthetic appreciation by personal (as opposed to business) users of fairly standardised technology products such as smartphones is associated directly with purchase intention or through different forms of value perceived by potential purchasers.

Australia has one of the highest smartphone penetrations in the world (67.6%) with a large number of users (40%) that is growing rapidly (International Data Corporation 2013). They have purchased at least one smartphone before, they are expected to have some knowledge of smartphone pricing and basic functions (Australian Communications and Media Authority 2011). Therefore, Australia was chosen as a suitable country to target respondents.

Although smartphones have become increasingly prevalent, there is still a lack of hard evidence regarding the impact of aesthetics on consumers' intention to purchase a smartphone. I will use an "aesthetics" construct to understand the importance of aesthetics to private (as opposed to business or commercial) consumers buying new technology products such as smartphones. Aesthetics relates to how something looks, attracts others and how someone feels when looking at an object (Swilley 2012). Aesthetics is understood via the sensory perceptions of look and touch creating reactions in the individual rather than telling (or expressing) with words (Postrel 2003).While consumers' reactions to the aesthetic aspects of products are increasingly recognized as an important determinant of consumer behaviour (Berkowitz 1987), there has been relatively little investigation on how this variable affects preferences for products.

Some studies have investigated the aesthetics of product design (Creusen & Schoormans 2005; Veryzer 1993) and aesthetics as a determinant of marketplace success (Bloch 1995) via different scales (table 2.2). Berlyne (1971) proposed a framework in which aesthetic pleasure is changed at the arousal level and motivational factors such as novelty, complexity and surprise, replace formal beauty or harmony as the measure of aesthetics. Following Berlyne (1971), Cox and Cox (2002) measured the association of complexity and exposure frequency. Thus, they

used schema, incongruity, meaningfulness and usefulness as measures of aesthetics (table 2.4).

In some research, stimulus factors are used to measure aesthetic impressions such as colour (Stich 2004; Swilley 2012), shape (Swilley 2012; Wehmeyer 2008; Raghubir & Greenleaf 2006), the perception of ideal vs prototypical form (Brunel & Swain 2007; Veryzer & Hutchinson1998), unity and prototypicality of product design (Veryzer & Hutchinson 1998; Kumar & Garg 2010) and physical size (Silvera, Josephs & Giesler 2002). Other research evaluates individual levels of differences in response to visual design (Bloch, Brunel & Arnold 2003; Yang, Zhang & Peracchio 2010), overstyling (Hagtvedt & Patrick 2014), product features (Hoegg, Alba & Dahl 2010) and verbal versus visual advertisements (Hirschman & Solomon 1984).

At a more general level, research has examined ways in which aesthetics is used as a measure of overall product evaluation. Yamamoto & Lambert (1994) use design as a measure of product performance. Swilley's (2012) scale includes overall appearance, beauty, design, shape, colour and touch of information technology devices, such as smartphones, MP3 players and personal computers.

Table 2.2. Dimensions of prior aesthetic scales

Scale	Description	Variables	Reference
Product Aesthetics	Assess the extent to which a product: 1. stimulates emotions 2. is perceived to be attractive and desirable	Not attractive/attractive	Hirschman and Solomon (1984)
		not desirable/desirable	
		not arousing/arousing	
		not beautiful/beautiful	
		does not or does make me like this product	
Aesthetic Response	It plays a critical part in influencing the effects of the product symbolism.	Enjoyable/offensive	Bell, Holbrook & Solomon (1991)
		poor/nice looking	
		displeasing/pleasing	
		unattractive/attractive	
		good/bad appearance	
		beautiful/ugly	

Scale	Description	Variables	Reference
Product Aesthetics	Appearance enhances (or diminishes) product desirability through an appeal to the individual's aesthetic sense.	Overall appearance	Yamamoto & Lambert (1994)
Visual Appeal	Evaluates how an object is perceived as aesthetically pleasing.	Schema	Cox &Cox (2002)
		incongruity	
		meaningfulness	
		Usefulness	
Centrality of Visual Product Aesthetics	Measures how individuals are different in their appreciation of visual aesthetics.	Value	Bloch, Brunel & Arnold (2003)
		Acumen	
		Response	
Consumption Assortment Aesthetic Evaluation	Measures the degree to which a diversity of the product is aesthetically pleasing.	aesthetically pleasing to consumer	Kahn & Wansink (2004)
		colourful	
		aesthetically pleasing	
Perceived Visual Aesthetics	Measures the characteristics of a good design of a website like orderliness	classic aesthetics	Lavie & Tractinsky (2004)
		expressive aesthetics	
Aesthetic Sensitivity	Dimensions that people commonly use to evaluate the aesthetic value of everyday objects (works of art, cutlery, offices, and car interiors).	Colour	Stich (2004)
		Harmony	
		clarity	
		form	
		symmetry	
		usability	
		design	
		Style	
		clarity	
Aesthetic Evaluation	Measures the degree to which a person views something as being visually attractive.	enjoyable	Lam and Mukherjee (2005)
		nice looking	
		pleasing	
		attractive	

Scale	Description	Variables	Reference
		Good	
		Appearance	
		Beautiful	
User-device Attachment	A variable which plays an important role in users' attachment to an electronic device.	beautiful	Wehmeyer (2008)
		Artistic	
		shape	
		colour	
		nice	
		overall appearance	
Perceived Aesthetics	Measures the impact of beauty and emotion on consumer acceptance of new technology products.	Pleasure	Tzou &Lu (2009)
		Beauty	
Aesthetic Technology	Measures the aesthetics of a technology device.	colour	Swilley (2012)
		design	
		overall appearance	
		texture/touch	
		beauty	
		Shape	

2.2.6. Justification for using Swilley's framework

To assess the contributing sources to aesthetic appreciation, Swilley's (2012) multi-sensory approach comprehensively covers the middle ground of the aesthetic continuum, products likely to be sought for both utilitarian and hedonic values. Accordingly, to assess aesthetic characteristics of products, the properties listed in Table 2.3 are used because:

1. Unlike prior models, this framework covers most of the dimensions of aesthetics, not just random measures. Other studies have focused on specific areas: Bloch, Brunel & Arnold (2003) on individuality in the centrality of visual product aesthetics for consumers; Hirschman and Solomon (1984) and Bell, Holbrook and Solomon (1991) on beauty; Cox and Cox (2002) on shape; and Kahn and Wansink (2004) on colour. Moreover, Bell, Holbrook and Solomon (1991) focused on

perceptions of products; however, they did not make clear the variables that determined whether something was ‘visually appealing’.

2. While other research has focused on different items, such as online websites (Lavie & Tractinsky 2004), works of art, cutlery, offices and car interiors (Stich 2004), Swilley’s study has been confirmed and validated by two studies (on tablets and e-books) resembling our context (smartphones).

3. Aesthetics has been used as a construct and not as a variable of other constructs such as emotional variables. Consequently, the dimensions of aesthetics are based on physical attributes of products, whereas other research, such as Lam and Mukherjee (2005) and Tzou and Lu (2009), used emotional variables as aesthetic factors. Swilley (2012) used a framework in which all variables were related to the physical attributes of a product and were validated by prior research, such as using colours from Wehmeyer (2008), beauty and shape from Cox & Cox (2004) and Bell, Holbrook & Solomon (1991) as shown in Table 2.3.

Table 2.3. Aesthetic properties

Dimension	Description	Reference
Colour	1. Purchase decision is strongly influenced by cues, like colour, that marketers send to them.	Tom et al (1987)
	2. Consumers’ perception of an object can be revealed by their selected colour choice	Aslam (2006)
	3. Product colour can engage buyers and increase sales.	Grossman & Wisenblit (1999)
	4. Aesthetic responses to a stimulus are influenced by colour.	Veryzer & Hutchinson (1998)
	5. Product quality is determined by	Kauppinen-

Dimension	Description	Reference
	its colour.	Räisänen & Luomala (2010)
Design	1. Design of a product is its competitive advantage and success factor in the marketplace.	Bloch (1995)
	2. Design and aesthetics are in interrelationship, as the physical form includes the aesthetic components of the product (e.g. shape, colour).	Veryzer (1995)
Overall Appearance	1. Individuals are drawn by product appearance.	Creusen & Schoormans (2005)
	2. The appearance of a product has a strong impact on consumer appreciation of its quality, function and ease of use.	Creusen et al. (2010)
• **Texture / Touch**	1. Customers' perceptions of the quality of products are influenced by touch.	Grohmann et al (2007)
	2. Touch can affect customer's purchase decision even when there is no related description about a product.	Peck & Wiggins (2006)
	3. Customers' preference for	Peck & Childers

Dimension	Description	Reference
	products can be made by their touching.	(2003)
	4. Touch can convey important information about product, which influences purchase decision.	McCabe & Nowlis (2003)
• **Beauty**	1. Aesthetic and utilitarian values, or beauty and use are indistinctive.	Vacker & Key (1993)
• **Shape**	1. The customers' purchase intentions and preferences are influenced by the shape of a product or its package.	Raghubir & Greenleaf (2006)
	2. When the shape of a product is compatible with current social and cultural trends, it becomes a product's competitive advantage.	Berkowitz (1987)

Adapted from Swilley (2012)

2.3. Parent theory two: Perceived Value

The first section of this chapter investigated the literature regarding aesthetics and related concepts. Having defined aesthetics and an approach to measuring an individual's aesthetic appreciation of an object, the next question considered is whether the relationship between aesthetics and purchase intention is mediated by different dimensions of value customers may perceive from appreciation of an aesthetically pleasing object. This section reviews perceived value and its components. Figure 2.3 presents the list of topics discussed in this section.

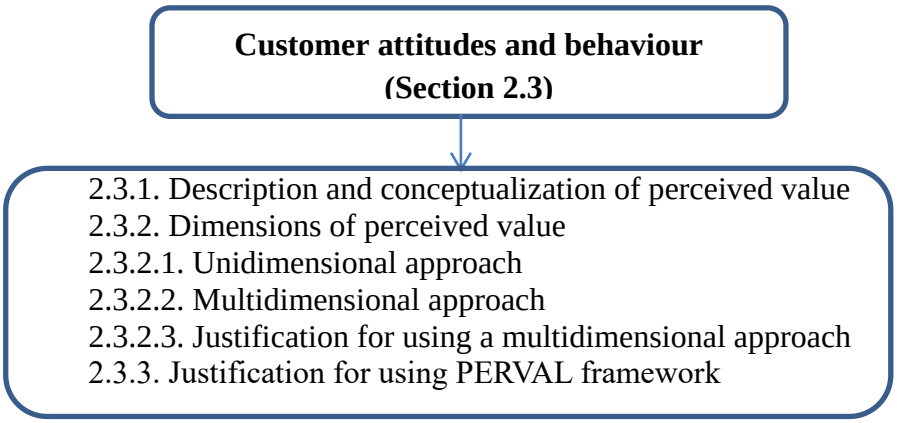

Figure 2.3. Outline of topics discussed in section 2.3

Customers usually perceive value by appreciation of the attributes of an aesthetically pleasing object such as colour or design (Boztepe 2007) before they purchase a product. They view these features as cues for what they seek, for instance, as being part of a social group (Boztepe 2007), or emotionally attached to their products (Sweeney & Soutar 2001).

Research has identified the need to understand perceived value better in order to explore its links to purchase intention (Sweeney & Soutar 2001). Thus, the first section provides a justification behind studying perceived value. Following this section, the next part is related to the description of perceived value (Section 2.3.1). Two different approaches in regards to dimensions of perceived value are investigated in 2.3.2 and justification for using a multidimensional approach is made in section 2.3.3.

2.3.1. Description and conceptualization of perceived value

Perceived value has been used as a differentiation and competitiveness strategy (Treacy & Wiersema 1993; Heskett et al. 1994; Ravald & Gronroos 1996), for companies to attract more customers. It is a feeling or perception formed from observing measurable factors such as features, quality, delivery, service and price and has become a key element in the consideration of product. Therefore, creating value for customers as part of the marketing process leads to profit and loyalty for companies (Khalifa 2004) such that perceived value has captured the attention the attention of many marketing scholars (Sánchez-Fernández & Iniesta –Bonillo 2007).

The concept of perceived value is not distinguished from 'values' in marketing (Lapierre, Filiatrault & Chebat 1999). Some scholars assume that 'value' and 'values' are the same while they are clearly distinct and convey different meanings (Sánchez-Fernández & Iniesta-Bonillo 2007).

While the term "value" is related to evaluative judgment of either a single transaction or an ultimate end-state, values refer to the norms, ideas, or goals that are used as a base for such an evaluative judgment (Holbrook 1999; Boksberger & Melsen 2011). Value is the "trade-off" between benefits and sacrifices and an interaction between a customer and a product or service (Payne & Holt 2001), but values are one's judgment and personal beliefs of what is important in life and refer to interests, pleasures, likes, preferences, duties, moral obligations, desires and many other kinds of selective orientations (Williams 1979, p.16) that people hold with respect to themselves and the ends they are seeking (Rokeach 1973). Thus, perceived 'value' and 'values' are not the same. Reviewing the literature, two main research approaches regarding perceived value are found: One-dimensional and Multidimensional. The next section will explain both in detail.

2.3.2. Dimensions of perceived value

Perceived value has been evaluated by two different scales — unidimensional and multidimensional — which are listed in figure 2.4. In a unidimensional approach, perceived value is measured in terms of economic factors (overall assessment of the utility of a product based on what is received and what is given) , whereas in the multidimensional method, it is defined in terms of both hedonic and utilitarian features of products. Thus, multidimensional perceived value is described as a customer-perceived preference in the evaluation of product attributes, attribute performance and consequences in terms of the customer's goals and purposes (Sweeney & Soutar 2001; Woodruff 1997).

2.3.2.1. Unidimensional approaches to value

Most of the initial conceptualisations of value in the unidimensional approach in the marketing area were based on Zeithmal's (1988, p.14) definition that a "consumer's overall assessment of the utility of the product (or service) is based on

perceptions of what is received (benefit) and what is given (cost)." In this perspective, perceived value covers utilitarian aspects of the product and uses economic and cognitive thought to assess the benefits and costs (Sánchez-Fernández & Iniesta-Bonillo 2007). Parasuraman, Zeithaml and Berry (1985) called it a subjective and personal notion that refers to the trade-off between perceived quality and perceived cost (Cronin, Brady & Hult 2000; Sánchez-Garcia et al. 2007; Chen 2008). Value perception in the mobile technology area, where many products have similar capabilities but may differ in appearance and feel, needs thorough investigation. Thus, to understand how aesthetics influences customers' perceptions of products, we need to define the dimensions of perceived value in the mobile technology context. There are three different approaches to measuring perceived value as a uni-dimensional construct (see figure 2.4):

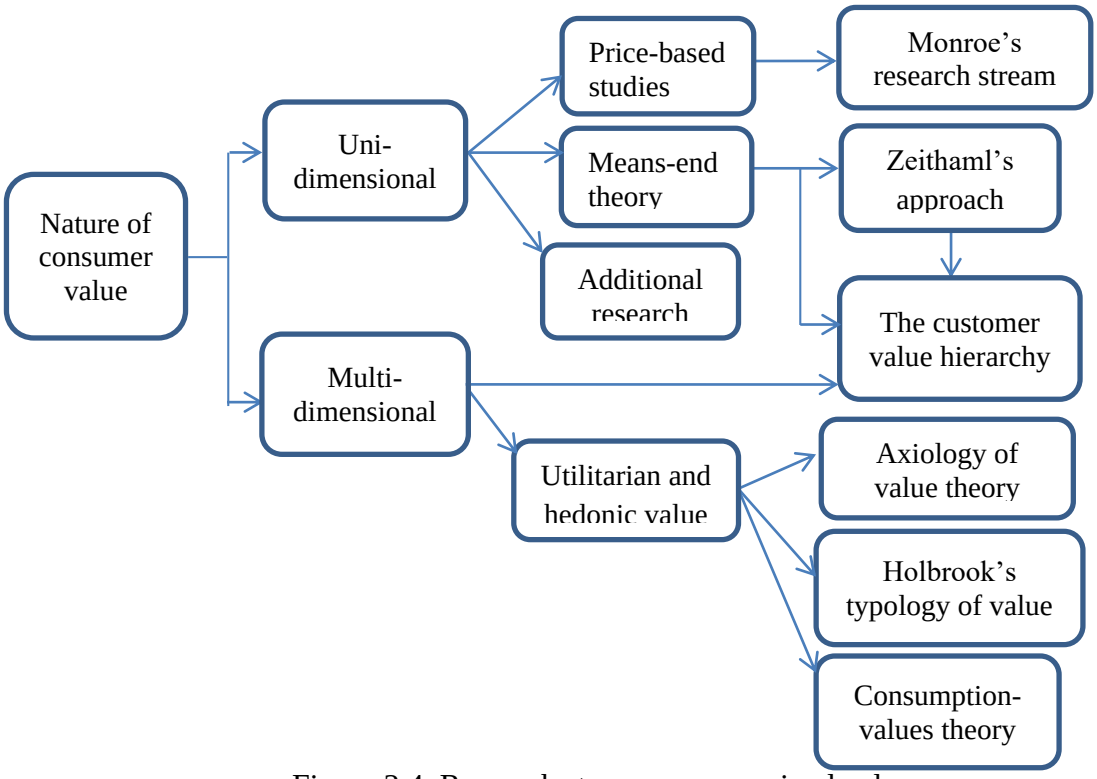

Figure 2.4. Research streams on perceived value
(adapted from Sánchez-Fernández& Iniesta-Bonillo 2007)

Monroe's price-based study approach: The main focus of this approach is the categorization and analysis of quality-price relationship (Dodds & Monroe 1985) which led to value being defined as a "…cognitive trade-off between perceptions of

quality and sacrifice" (Dodds, Monroe & Grewal 1991, p.308). For this approach, external variables like price, brand name and store name influence perceptions of product quality and value (Agarwal & Teas 2004; Teas & Agarwal 2000). Although price has a positive effect on perceived product quality, it has a negative impact on a product's value (Dodds 1991). However, researchers have added more variables as determinants of perceived value. For example, an affective element (Li et al. 1994), perceived risk (Agarwal & Teas 2001) and store image (Grewal et al. 1998).

Zeithaml's approach or Means-end theory: This approach attempts to bridge customer's behaviour and their values by proposing that the decision-making processes are affected by firstly, relationships among product attributes; secondly, the perceived consequences of consumption; and lastly, the personal values of consumers (Gutman 1982). Zeithaml (1988) used this theory to modify a model first proposed by Dodds and Monroe (1985). The framework of this model was based on the relationship between quality and price. Dodds and Monroe's model defined value in four different ways: as low price; whatever customers want in a product; the quality acquired for the price paid; and what the consumer gets in exchange for what s/he gives. In her conceptual model, Zeithaml (1988) clarified that evaluating products was not only more subjective, but also based on the individual's perception of price, quality and value rather than on an objective basis or actual prices or quality. Zeithaml (1988) divided the attributes of all products into two categories: intrinsic and extrinsic cues. Intrinsic cues relate to the physical composition of a product such as flavour, colour and texture, which do not change without changing the nature of the product, whereas extrinsic cues are not related to physical attributes of a product. For extrinsic cues, price, brand name and level of advertising can influence a buyer's decision without being a physical attribute of a product. In addition, situational or contextual factors were described as an element of value perception. Therefore, perceived value is influenced by the customer's definition of value and not determined solely by a company's standards.

Other research in the unidimensional approach: Some research related to the unidimensional approach proposes different variables to measure value, including corporate image (Andreassen & Lindestad 1998), quality and sacrifice (Cronin,

Brady & Hult 2000). The problem with these studies is that they have a narrow view of perceived value which is defined in terms of economic factors.

2.3.2.2. Multidimensional approaches to value

There are two different measurements that measure perceived value as a multidimensional construct: Means-end and utilitarian and hedonic value. The means-end framework does not focus on product attributes; rather, it is used to understand how consumers link attributes (*A*) of products with particular consequences (*C*), functional or psychosocial benefits achieved from experiencing with a product and how these consequences satisfy their personal values (*V*) (Woodruff & Gardial 1996).

The hedonic and utilitarian value scale was developed in order to find out what value a customer may gain by using a product without linking it to the personal values or lifestyle of the individual. A brief description of means-end and hedonic and utilitarian models are made. Next, different approaches following the hedonic and utilitarian models are brought under scrutiny.

Means-end theory: The customer value hierarchy: This theory has been used to explore how consumers classify and get information about products (Woodruff & Gardial 1996, Gutman 1982) and to help managers understand how customers evaluate the value of products and increase overall satisfaction (Woodruff 1997). Customer value here is defined as customer-perceived preference for and evaluation of, product attributes, attribute performance and consequences in terms of the customer's goals and purposes (Woodruff 1997). This definition is broader than the one-dimensional approach definition of perceived value that focuses on product attributes.

The customer value hierarchy proposes that to create value and satisfy customers in a competitive market, companies cannot simply focus on making desired product attributes. Customers may like to add certain features to products in order to obtain a desired consequence, expressed in use and possession value. To achieve the desired consequences, customers learn to look for certain consequences to their goals and purposes. Different use situations also have their own attributes,

consequences and purposes, which leads to change over time in value that the customer may receive. For example, a customer's value hierarchy of personal computer services used at a customers' office may be different from the hierarchy for those services at home (Woodruff 1997). Hence, the values derive from customers' learned perceptions, preferences and evaluation changes over time based on the situation. In order to understand and measure the various aspects of customer value, Parasuraman (1997), based on Woodruff and Gardial's (1996, p.64) measurement model, proposed a new framework made up of four different groups of customers: first-time customers, short-term customers, long-term customers and defectors. He tried to understand values customers perceived not only from before and after using the product, but also during product usage. First-time customers focus mostly on attribute-level criteria, short-term ones focus on consequences and long-term purchasers concentrate on goal-level criteria (Parasuraman 1997).

Another approach to understanding how customers choose between products is called an "intended value map" (Van der Harr, Kemp & Omta 2001, p. 630). It seeks to help managers understand how customers decide between different products. This theory suggests two different levels: The first-order level which is based on the trade-off between the individual's perceived benefits and sacrifices at the time of purchase decision; the second-order refers to the benefits individuals' try to obtain. Other research investigated the impact of culture on the customers' judgment of value (Overby et al. 2004 & 2005).

Utilitarian and hedonic value: The hedonic part of the consumption experience received more attention after the early 1980s (Hirschman & Holbrook 1982). The first framework was proposed in 1994 in order to add the hedonic component of the consumption experience to the utilitarian one in order to measure the consumer's appraisal of a shopping experience (Babin, Darden & Griffin1994). In this approach, utilitarian value as an instrumental, task related, rational objective value focuses on an object, its price, or a functional benefit made by that object value (Hirschman & Holbrook 1982). However, hedonic value is related to entertainment and emotional feeling while shopping (Bellenger, Steinberg & Stanton 1976). It is more subjective and personal than utilitarian and affective attributes. Three different theories have been proposed in order to operationalize shopping in terms of both utilitarian and

hedonic value. The frameworks made from these theories are the basis for further research into the multidimensional nature of the concept.

Axiology or value theory: One of the theories that could describe value in terms of both hedonic and utilitarian was axiology. Presenting an axiological model of value, Hartman (1967, 1973) described value in terms of extrinsic, intrinsic and systematic values. 'Extrinsic value' is related to the utilitarian or functional use of a particular service as a means to a specific end, 'intrinsic value' is the emotional appreciation of consumption and 'systematic value' is about the rational side of inherent relationships among concepts in their systematic interaction (Sánchez-Fernández & Iniesta-Bonillo 2007). Adapting Hartman's (1967, 1973) framework, Mattsson (1991) used three new constructs: emotional value to address the feeling of consumers; practical value, the physical and functional aspects of consumption; and logical value, the rational and abstract characteristics of the purchase. Later, de Ruyter et al. (1997) explained how different stages in the service delivery process can be grouped as three axiological value dimensions and how each stage associates with the judgment of overall satisfaction.

Consumption-value theory: The idea behind this theory is that to choose a product over another, customers perceive different values which are categorized as functional, social, emotional, epistemic and conditional (Sheth, Newman & Gross 1991a; 1991b). Thus, consumption–value theory was set up based on three fundamental propositions: (1) that market choice is a function of multiple values; (2) that these forms of value make a differential contribution for any product in different situations; (3) that the different forms of value are independent. For example, to a smartphone purchaser, the purchase of a smartphone might provide functional value (the technical capabilities such as a powerful processor or running different programs at the same time); social value (friends have your favourite smartphone); and emotional value (the consumer feels happy in owning a smartphone). All frameworks made after Sheth, Newman and Gross's (1991a) measurement model tried to adapt the theory of consumption to their particular study situation.

Durable products are usually assessed and purchased for different reasons but customers pay much attention to the quality, suitability and style of these

products (Swait & Sweeney 2000). They look for the trade-off between the values they may gain in order to buy these products (Celsi & Olson 1988; Petty, Cacioppo & Schumann, 1983). Four dimensions (emotional, social, quality/performance and price/value for money) were found to have a significant impact on customer satisfaction using durable goods. This framework was one the few studies which used durable goods as its case study. Therefore, the dimensions of value found in this study could be used for other durable goods such as mobile phones.

In another study, done by Wang et al. (2004), factors such as time, effort and energy were added to Sweeney and Soutar's (2001) framework as non-utilitarian components of perceived value (Wang et al. 2004). The problem with the framework is that it is limited to service industries and whether customers' are satisfied with the service they used before. Thus, factors such as effort and energy are more related to the functional attribute of value and do not add any contribution to the hedonic parts.

Another related study was done in the mobile service industry to measure the impact of perceived value on purchase intention (Pura 2005). Monetary and convenience values were added as non-utilitarian components of perceived value to the Sheth, Newman and Gross's (1991a) framework in order to measure the influence of the dimensions of perceived value on commitment and behavioural intention to use location-based mobile services.

However, the usage of this framework is limited to the service industry and the service provided to customers. The conditional value, the value customers may gain by using mobile service in different circumstances, is useful when the time and place that customers use a service and product is important. Monetary value is also more related to the trade-off between the values customers may achieve by using a service with the money they pay for that service. Commitment also becomes an important element when customers are loyal to their favourite brands and service or a product they use.

Holbrook's typology of perceived value: Another theory that gained popularity among researchers is the "typology of consumer value." This typology focuses purely on hedonic attributes of perceived value. Perceived value in this typology is

defined as an "interactive relativistic preference experience," meaning that "the relationship of customers to products (subjects to objects) operates relativistically (depending on relevant comparisons, varying between people, changing among situations) to determine preferences that lie at the heart of the consumption experience" (Holbrook 1994, p.27).

The relativism relates to three facets of value: value is comparative, meaning that each subject (customer) makes utility comparisons among objects (products) rather than among people's (customers), personal assessment (which varies from one individual to another) and situational (the context in which the evaluative judgment occurs). There are two different groups of attributes in this typology as well (table 2.4): Extrinsic (whether an object (product) is used as a means to reach some other objects (extrinsic value) versus intrinsic (whether it has value for its own benefit).

Table 2.4. Typology of consumer value

		Extrinsic	**Intrinsic**
Self-oriented	Active	Efficiency (output/input, convenience)	Play (fun)
	Reactive	Excellence (quality)	aesthetics (beauty)
Other-oriented	Active	Status (success, impression management)	Ethics (virtue, justice, morality)
	Reactive	Esteem (reputation, materialism, possessions)	Spirituality (Faith, ecstasy, rapture, sacredness, magic)

Source: Holbrook (1999, p.12)

Self-oriented versus other-oriented refers to a situation where an individual is either pushed by self-interest (self-oriented) or encouraged by others (other-oriented). Also, active versus reactive relates to how a customer perceives value; by using a product (active) or being influenced by an object (reactive) (Holbrook 1994; Gummerus 2013). This three-axis paradigm (self-oriented vs other-oriented, active

vs reactive and extrinsic vs intrinsic) generates eight distinct dimensions of value (Table 2.4). Holbrook believes that all eight types of perceived value may arise together but in differing degrees in any consumption experience (Holbrook 1994).

Few studies have used this framework (e.g. Mathwick, Malhotra & Rigdon 2001; Sánchez-Fernández & Iniesta-Bonillo 2009) and they focus only on one dimension of the framework. For example, Mathwick, Malhotra and Rigdon (2001) developed an experiential value scale in the catalogue and internet shopping environment. In their study, the focus is on self-oriented dimensions of experiential value in order to measure the influence of customer shopping tasks and retention of information display properties on individuals' perceptions of experiential value (Mathwick, Malhotra & Rigdon 2001). Sánchez-Fernández and Iniesta-Bonillo (2009) contributed to this theory by adding efficiency and quality as variables of economic value in the typology of consumer value to make it more applicable in the service industry.

To sum up, although this framework covers all aspects of hedonic dimensions of perceived value, it ignores the utilitarian aspect of perceived value. The generalizability of the results is also limited. It is useful in the service sector, for example restaurants, (e.g., Sánchez-Fernández & Iniesta-Bonillo 2009) and doesn't quite fit the requirements of my study as I am looking at the purchase of an item rather than a service.

2.3.2.3. Justification for using a multidimensional approach: Comparison of different approaches

After reviewing the two different perceived value measurement approaches, the multidimensional method is found to be more appropriate for the study. Although the one-dimensional approach is a simple and straightforward concept, it is too narrow (Mathwick, Malhotra & Rigdon 2001) and cannot cover all aspects of perceived value such as intangible, intrinsic and emotional variables that shape part of perceived value (Sweeney & Soutar 2001; Chen & Hu 2010). Emotions like pleasure and arousal are important components of intrinsically valuable variables (Unger & Kernan 1983). Should perceived value be measured as a combined utilitarian and

hedonic response, it should be treated as an affective component reflecting hedonic attributes such as entertainment and emotional value (Lemmick, de Ruyter & Wetzels 1998).

Hedonic value is more subjective and personal than its utilitarian counterpart and results more from fun and playfulness than from task completion (Holbrook & Hirschman 1982). Thus, hedonic shopping value reflects shopping's potential entertainment and emotional worth (Bellenger, Steinberg & Stanton 1976).

Pleasure and arousal should correlate highly with hedonic value. However, the effect of consumer emotions on utilitarian value is less clear (Babin, Darden & Griffin 1994). One review of different frameworks has found that the multi-dimensional approach is more appropriate for evaluating shopping habits of individuals (Chi & Kilduff 2011). When it comes to the visual appeal of products, the socio-psychological aspects of consumption (hedonic and social) tend to be at least as equally important as utilitarian (functional) aspects (Kempf 1999).

Consumption experiences usually involve more than one type of value simultaneously (Sweeney & Soutar 2001; Sheth, Newman & Gross 1991b; Koller, Floh & Zauner 2011) and most of the dimensions of perceived value in different research cover both hedonic and utilitarian parts of the products (Callarisa Fiol et al. 2009). Researchers have found that consumers distinguish between hedonic and utilitarian values and that their perceptions, attitudes and intentions depend on the product’s nature (Turel, Serenko & Bontis 2010). In addition, deciding whether the product is hedonic or utilitarian may drive the consumer’s perception and decision to purchase the item (Batra & Ahtola 1991; Dhar & Wertenbroch 2000). Hedonic facets in consumer behaviour relate to the products’ aesthetic, experiential and enjoyment-related benefits and utilitarian facets refer to the functional, instrumental and practical benefits of consumption offerings (Chitturi et al. 2007; Dhar & Wertenbroch 2000). Although most products contain both utilitarian and hedonic attributes (Okada 2005), for a number of product categories, such as mobile technology products including tablets, e-book readers and smartphones, hedonic aspects may play a critical role in the decision-making process (Swilley 2012).

The multidimensional view has much to recommend it (Sweeney & Soutar 2001; Petrick 2002; Gallarza & Gil Saura 2006; Sánchez-Fernández & Iniesta-Bonillo 2007). The multidimensional approach includes perceived value based on utility as defined by Zeithaml (1988). A multidimensional conceptualisation focuses on the development and measurement of the value construct needed to adequately capture the presence of both cognitive (functional and economic) and affective (emotional and social) factors in the nature of value (Sánchez-Fernández & Iniesta-Bonillo 2009; Sheth, Newman & Gross 1991b; Sweeney & Soutar 2001). It is also compatible with theoretical developments regarding the role of feelings in the buying and consumption processes (Sánchez-Fernández & Iniesta-Bonillo 2007). Having reviewed the various multidimensional approaches, the consumption theory approach (1991) which captures both utilitarian and hedonic attributes of products such as the economic, social and emotional, appears to be the most exhaustive. Other theories in the multidimensional category are less comprehensive in some areas. Although the "customer value hierarchy" framework is successful in defining different levels of value and reflects the 'richness and complexity of the concept' (Parasuraman 1997, p.154), it cannot shed light on how much value customers may gain from a product at different levels (at the attribute, consequence, or goal level) and how satisfied they may be with products at different levels. In this framework, it is not clear whether satisfaction and value are the same or distinct when they both happen at higher levels (consequences, goals and purpose).Therefore, there is ambiguity whether measuring the satisfaction a customer derives from a product or service is different from measuring the value they derive from it (Parasuraman 1997).

Holbrook's (1999) theory is the only theory, which values ethics and spirituality and uses 'efficiency' as the only factor measuring benefits perceived by customers (Sánchez-Fernández & Iniesta-Bonillo 2007). However, it also has some limitations. For example, it is hard to measure moral and spiritual aspects such as faith, ecstasy, virtue, justice and morality (Sánchez-Fernández & Iniesta-Bonillo 2009). Some variables such as time can also have both active and reactive roles (Leclerc & Schmitt 1999). It is also not clear how to distinguish status from esteem (Solomon 1999) and active from reactive sources of value (Richins 1999). In

addition, there is not any theoretical background for choosing the three-dimensional approach, which makes it hard to add any attribute such as economic, tangible/intangible and physical/mental to the framework in order to adapt to different contexts(Smith 1999).

2.3.3. Justification for using PERVAL framework

This study selects the PERVAL framework developed by Sweeney and Soutar (2001) based on Sheth, Newman and Gross's (1991) framework, to evaluate consumers' perceptions of the value of tangible products. PERVAL has been tested in both pre-purchase and post-purchase contexts and found to be valid and reliable in both situations. It also has been used and evaluated in different areas and countries (Walsh, Shiu & Hassan 2014) as listed below:

- Using mobile internet in a cross-national research in Korea and Japan (Lee et al. 2002)
- Technology acceptance in Canada (Turel, Serenko & Bontis 2007)
- Tourism in Australia (Williams & Soutar 2009)
- Australian franchisees' risk perceptions (Grace & Weaven 2011)
- Wine region equity in the USA (Orth, McGarry Wolf & Dodd 2005)
- Licensed sport merchandise in the U.S.A (Lee et al. 2011)
- Private-label brands in Germany (Walsh & Mitchell 2010)
- Furniture industry in the UK (Walsh, Shiu & Hassan 2014).

Functional, social and emotional dimensions of value were the core of perceived value. However, in order to be more effective in capturing perceived value, some minor revisions have been made to enhance Sweeney and Soutar's (2001) framework to the context of this study (table 2.5).

Table 2.5. Scale measurements of perceived value dimensions

Variable	References	Scale Items
Functional Value	Sheth, Newman & Gross (1991b), Yang & Jolly (2009), William & Soutar (2009), Callarisa Fiol et al. (2009), Callarisa Fiol, Moliner Tena & García (2011), Sweeney & Soutar (2001)	Consistent quality done well,
		acceptable standard of quality
		well-organised (William & Soutar 2009; Sweeny & Soutar 2001).
		reliable (Yang & Jolly 2009; Callarisa Fiol, Moliner Tena & García 2011).
		good functions (Yang & Jolly 2009)
		ease of use (Callarisa Fiol, Moliner Tena & García 2011)
		usefulness (Ben-Bassat, Meyer & Tractinsky 2006; Tractinsky et al. 2006)
Social Value	Sheth, Newman & Gross (1991b), Sweeney & Soutar (2001)	grants social approval from others,
		makes me feel accepted to others,
		improves the way a person is perceived,
		gives a good impression to other people (Sweeney & Soutar 2001).
Emotional Value	Sweeney & Soutar (2001), Yang & Jolly (2009), Bloch, Brunel & Arnold (2003)	many people I know buy these products (Roig et al. 2006)
		give me feelings of wellbeing,
		using it was exciting.
		made me elated (Sweeney & Soutar 2001)
		feels Relaxed while using (Yang & Jolly 2009)
		feels Good to have a product with superior
		beautiful design makes our world a better place to live (Bloch, Brunel & Arnold 2003)

Other factors used in different contexts, such as perceived monetary cost, perceived risk, time and effort spent in tourism industry (Gallarza & Gil Saura 2006), efficiency in the financial sector (Sánchez-Fernández & Iniesta-Bonillo 2009); playfulness and value for money in internet applications (Turel, Serenko & Bontis 2010), are not applicable to this study. Furthermore, factors relating to the product's capacity to arouse curiosity, discovered by Sheth, Newman & Gross (1991b) and used in service areas such as travel, is less important in the purchase of durable goods (Babin, Darden & Griffin1994; Sweeney & Soutar 2001). Since we need to understand the value consumers perceive in aesthetics without the monetary value of the product, price is excluded from our research scope. Consequently, the most acceptable factors to investigate in this context will be functional, social and emotional value determined by Sweeny and Soutar (2001). In continuing, these dimensions are described in detail.

2.3.3.1. Functional Value

Sheth, Newman & Gross (1991b) defined functional value as the perception obtained from the utilitarian or physical performance of an object. Functional value is acquired from characteristics or attributes of objects while using or consuming the product (Lai 1995). Thus, functional value is extrinsically-motivated and sought for the benefit of the individual rather than others (Holbrook 2006). It refers to the service derived from the attributes of products, information, delivery and personal interaction (Eggert, Ulaga & Schultz 2006) and concentrates on performance and functionality (Russell-Bennett, Previte & Zainuddin 2009). Customers obtain value from attributes such as product quality (Sweeney, Soutar & Johnson 1999). This research is focused on performance, or quality, as a functional characteristic of a product, defined by Sweeney and Soutar (2001, p.211) as "the utility derived from the perceived quality and expected performance of the product", such as durability, technical quality (Callarisa Fiol et al. 2009; Callarisa Fiol, Moliner Tena & García 2011), ease of use (Tzou & Lu2009; Cyr, Head & Ivanov 2006) and usefulness (Ben-Bassat, Meyer & Tractinsky 2006; Lee & Koubek 2010; Tuch et al.2012).

Also, Tractinsky, Shoval-Katz and Ikar (2000) studied the influence of visual attractiveness on product usability, investigating the theory of "what is beautiful is

usable." This study considers physical attractiveness as the most accessible attribute after which people begin to form their perceptions of other traits. The findings of the study confirmed that while there is a high correlation between aesthetic appreciation and functional ability prior to the experiment and after the experiment, actual interactions may not have had much influence. Thus, it needs to be investigated if a customer perceives a product to be aesthetically pleasing, will this influence the perceived functional value of the product and make the buyer feel that the product may be functionally better and more usable than a similar product.

2.3.3.2. Social Value

Human beings are social animals and like to convey highly appraised social images to others (Cho & Jang 2008) and to improve their social networks (Balakrishnan & Gopal Raj 2012). In the marketing area, for example, some individuals choose products to impress others (Chi & Kilduff 2011) in addition to meeting their personal needs, which can be used as desire to please or to elicit the reaction of others (Tepper, Duffy & Shaw 2001). They may relate the product to their referential groups and look for classifying their own identities, improving their image and achieving the product's social value (Park, Jaworsky & MacInnis 1986). Social value has been defined as the ''perceived utility acquired from an alternative's association with one or more specific social groups'' (Sheth, Newman & Gross 1991b, p.161) and is used as an enhancement of a person's social self-concept (Sweeney & Soutar 2001). Products thought to be observable (e.g. smartphones , e-book readers), able to be shared with others, or even considered to be functional or utilitarian (e.g. kitchen appliances) are mostly chosen based on their social value (Sheth, Newman & Gross 1991b). By choosing visually beautiful products, purchasers may feel that they can impress others better and improve their social status (Holbrook 1999). Others could be any significant party referred to, when considering whether to purchase a product. There are different referent groups including family members, friends and peer groups.

Referent groups: The preferences towards particular products may be driven not only by individuals' desires but also by others' judgments. Individuals who link with a particular clique usually adopt the preferences of that group (Yang & Allenby

2003). For instance they prefer to use particular brands (e.g., Apple, Samsung) or even entire product categories (e.g., smartphones). This preference may be driven by social concerns, endorsements from celebrities who increase a brand's credibility, or information received from others.

Referent groups are defined as “social groups that are important to a consumer and against which he or she compares him or herself in forming attitudes and behaviours” (Edson Escalas & Bettman 2003, p.341). An individual follows his referent group perspectives or values as the basis for his current behaviour or as a guide for behaviour in a specific condition. He uses a group as his main point of reference in a different situation. These groups can be immediate family, teammates, friends and colleagues (Quester, Pettigrew & Hawkins 2011). Referent group impacts can be strong, pressuring individuals to conform to group expectations. This influence can be even stronger when the use of a product is visible to the group, such as the case of smartphone use (Quester, Pettigrew & Hawkins 2011). This conformity can result from three forms of influence: informational, normative and identification (Bearden, Netemeyer & Teel 1989).

Informational influences occur when an individual views the manners and ideas of referent group members as helpful pieces of information. For example, a person may use a particular type of smartphone because he has noticed that most of his colleagues or friends seem to use that kind of phone and it is simpler to follow this guide than looking for a new phone. Normative influences, which are called utilitarian influences, occur when an individual conforms to group expectations to gain a direct reward or to avoid sanction. Identification influences, or value-expressive influences, happen when people follow the group norms and values as a guide for their own attitudes or values. The individual is using the group as a referent point for his or her own self-image.

In this research, conformity is expected to occur in the form of informational and identification influence since a person is expected to use their family, friends and others who are close to them as approvers while not looking to gain a reward or to avoid sanction. In sum, it is necessary to ascertain whether, if a product is aesthetically pleasing, respondents will perceive the aesthetically pleasing object as a tool to improve their social image and strengthen their intention to purchase it.

2.3.3.3. Emotional Value

Aesthetics is used as a means to attract consumers' attention and convey product information (Tractinsky, Shoval-Katz & Ikar 2000; Bloch 1995; Crilly, Moultrie & Clarkson 2004).This attention may be through an emotional response, which leads to an appraisal of its value. Emotional value is defined as "the perceived utility acquired from an alternative's capacity to arouse feelings or affective states" (Sheth, Newman & Gross 1991b, p.161). Non-cognitive and unconscious incentives which are intrinsically motivated and pertain to various positive or negative affective states can drive this feeling (Sánchez-Fernández & Iniesta-Bonillo 2007).

Emotional value has been used in many different contexts as a dimension of perceived value (Sheth, Newman & Gross 1991b) and is derived from the feelings and emotions produced while buying a product (Callarisa Fiol, Moliner Tena & García 2011). Consumers react to the physical attributes of a product that produces emotional reactions (Bloch 1995). Play or fun achieved by using a product or service is related to emotional value (Holbrook 1994). Enjoyment and fun-seeking have been shown as customers' motives to use mobile phones (Leung & Wei 2000).Visual attributes of a product can be used as a competitive advantage of a product by bringing about the emotional meaning products have for consumers and by showing the high value of such emotional response products have (Lojacono & Zaccai 2012). Earlier studies have shown that emotions can affect purchase decision (Mizerski & White 1986; Burnett & Lunsford 1994).This could explain why customers do not always decide based on the functional features of products and focus on their physical attributes (Håkannson 1982).

2.4. Parent theory three: Purchase Intention

The first section of this chapter explored the literature in regards to aesthetics and related concepts. In the second section different dimensions of perceived value were investigated. The third section looks into purchase intention. Figure 2.5 presents the list of topics presented in this section. In order to measure whether customers may purchase a product, purchase intention is used.

Following the description of Manski's (1989) behavioural intention, purchase intention can be defined as a person's subjective probability that the purchase behaviour will occur. However, in order to understand whether intention to buy a durable product is the best option for predicting actual purchase in this study, I have to look at whether behavioural intention to do an activity in general could be a good predictor of actual behaviour. Upon justifying behavioural intention as the predictor of actual behaviour, I use purchase intention as the predictor of actual purchase. Therefore, a brief description of behavioural intention and its advantage over other predictors of actual behaviours are made in the beginning.

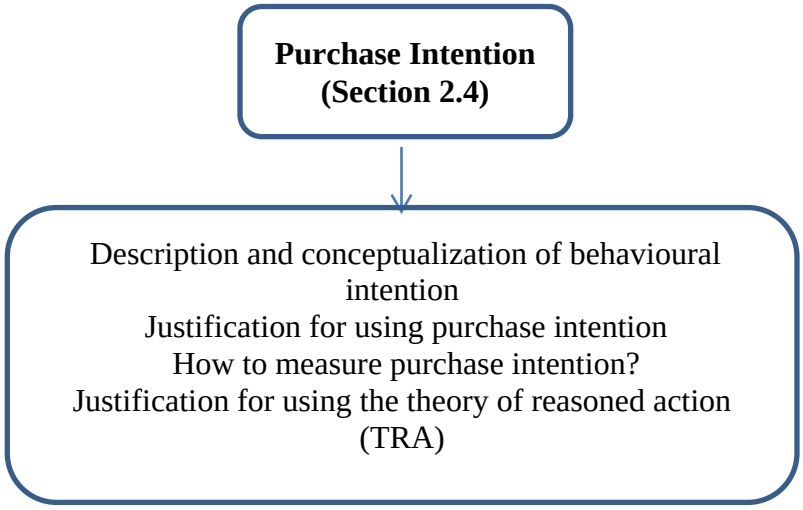

Figure 2.5. Outline of topics discussed in section 2.4

2.4.1. Description and conceptualization of behavioural intention

Behavioural intention was first used in the theory of reasoned action (TRA) as an indication of a person's readiness to perform a particular behaviour (Fishbein & Ajzen 1975). It has been widely used since then as the antecedent of actual behaviour (Fishbein & Ajzen 2010). It is suggested that, "if anyone wants to know whether or not an individual will perform a given behaviour, the simplest and probably most efficient thing one can do is to ask the individual whether he intends to perform that behaviour" (Fishbein & Ajzen 1975, p.369). Intention is thus, assumed to be the immediate antecedent of behaviour (Ajzen 1991; Schlosser 2003; Lee & Trail 2012). It "constitutes a willful state of choice where one makes a self-implicated statement as to a future course of action" (Bagozzi 1983, p.145).

However, "Behavioural Intention" is often poorly differentiated from other related constructs such as willingness (Gibbons et al. 1998) or expectations (Warshaw & Davis 1985). Despite research on these constructs, the relationships among them remain largely unclear (Lapierre, Filiatrault & Chebat 1999). The following section seeks to disentangle these concepts, giving clarity to the purchase intention construct used in this study.

2.4.2. Comparison between behavioural intention and behavioural expectation

Behavioural Expectation is defined as "the degree to which a person has formulated conscious plans to perform or not perform some specific behaviour" (Warshaw & Davis 1985, pp.214-5). Some researchers argue behavioural expectation is a better predictor of behaviour inasmuch as it considers behavioural controls such as situational constraints or lack of ability, which may impede performance of a behaviour (Sheppard, Hartwick, & Warshaw 1988; Warshaw & Davis 1985; Sheeran & Orbell 1998). However, subsequent research has often reported little difference (Netemeyer & Burton 1990; Sheeran & Orbell 1998; Armitage & Conner 2001; Randall & Wolff 1994).

Sheppard, Hartwick and Warshaw (1988) proposed that before choosing between these two variables, researchers have to ask if the behaviour is more volitional or more goal-directed. Since behavioural expectation considers variables

beyond a person's control that may impede goal achievement, it should be a better predictor of goal-directed behaviour. In contrast, behavioural intention can be a better option when a behaviour is highly volitional. Since the aim is to understand the role of aesthetics on behavioural intention to purchase without considering any impediment to buying a product, such as price and whether respondents are more inclined to buy a product after being influenced by the beauty of the product, purchase intention should be a better predictor of real purchase.

2.4.3. Comparison between behavioural intention and behavioural willingness

A small number of researchers have used behavioural willingness as a measure of actual behaviour (Fishbein & Ajzen 2010). Compared to behavioural intention, it does not assume that people should have the intention or presumption of a behaviour or its effect (Gerrard et al. 2002; Gibbons et al. 1998). It reflects an "individual's openness to opportunity, that is, his or her willingness to perform a certain behaviour in situations that are conducive to that behaviour" (Pomery et al. 2009, p.896). It has been studied in the context of willingness to undertake unacceptable behaviour, whilst aware of the hazards, for example, of drinking and driving (Gerrard et al. 2002; Gibbons et al 2004; Spijkerman, Van der Einjnden & Engels 2005; Thornton, Gibbons & Gerrard 2002; Van Empelen & Kok 2006). However, it is not clear how researchers can capture the non-intentional, irrational influences of behaviour (Fishbein & Ajzen 2010). Since this research does not study behaviour in any risky situations and potential buyers are likely to evaluate alternatives before buying durable goods (Sweeney & Soutar 2001), willingness to act has been rejected for this study.

2.4.4. The justification for using intention to purchase or purchase intention

The behavioural intention to purchase (or purchase intention) is formed when a consumer plans to purchase the most favorable option (Lantos 2011). Following Fishbein and Ajzen's (1980) study on behavioural intention, purchase intention is defined as a person's subjective probability that the purchase behaviour of interest will occur (Fishbein & Ajzen 2010). Therefore, the higher this subjective probability,

the higher the possibility that the customer will buy a product. Purchase intention has been chosen for use in this study because:

1. Purchase intention provides the most comprehensive conceptualisation of behavioural intentions, the immediate antecedent of behaviour (Ajzen 1991; Schlosser 2003; Lee & Trail 2012) and has been used in research that has relevance to this study (Yu & Deam 2001; Turel, Serenko & Bontis 2007). This allows for a more meaningful insight in order to understand why and how the customer intends to buy a product.

2. Obtaining a direct measure of behaviour is problematic (Gilbert, Fiske & Lindzey 1998). In this case, we would need to find out where our more than 400 respondents may buy their products and see whether they purchase or not. Otherwise, people may "distort their responses due to self-presentational concern, or because they want to tell the researcher what they want to hear" (Gilbert, Fiske & Lindzey 1998, p.120).

2.4.5. Measurement of purchase intention

Justifying the usage of behavioural intention in general and purchase intention specifically, the next issue raised is how to measure purchase intention. Generally, intention is viewed as part of an attitudinal framework and the last stage, which evaluates the favorableness or unfavourableness toward an object before the actual behaviour happens (Fishbein & Ajzen 1975, 2010). Intention is also treated as a conative dimension of attitudinal frameworks (John 1984, p.280), "the likelihood or tendency of undertaking a specific action or behaving in a particular way with regard to the attitude object" (Eroglu 1992, p.22). This viewpoint has led to the assumption of a strong relationship between attitudes and intentions (Fishbein & Ajzen 1980; Sheppard, Hartwick & Warshaw 1988).

The literature largely divides into two approaches in developing attitude frameworks: the tricomponent approach and multi-attribute approach (Solomon 2007; Fishbein & Ajzen 2010; Grimm 2005). In the tricomponent framework, all the dimensions of attitude, beliefs, feelings and intention are in the interrelationship and intention could be the cause of belief and not an outcome. For example, the cognitive

component (beliefs about an object) can come before or after the affective dimension (feeling) in a situation. However, for a multi-attribute approach, there is no interrelationship among constructs and purchase intention is the result of the attitude and belief about an object. The following provides an explanation of each approach. In the end, the justification for using multi-attribute approach is made.

2.4.5.1. Tricomponent attitude model

In this model, as shown in figure 2.6, an attitude includes cognitive (beliefs), affective (feelings) and conative (behavioural or response tendencies) components (Rosenberg & Hovland 1960). Each of these attitude components is discussed in more detail below.

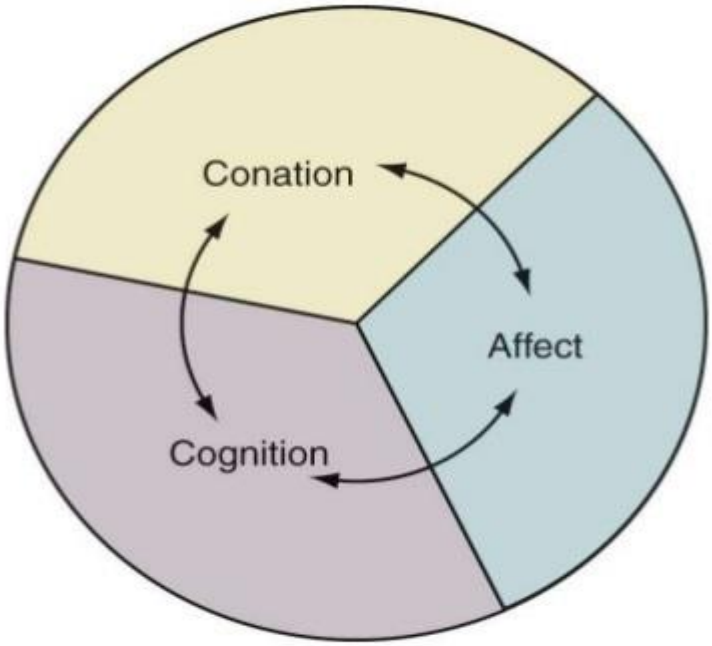

Figure 2.6. A simple representation of the

The cognitive component consists of a consumer's beliefs and knowledge about a product or service and whatever else can be called a stimulus (Hawkins & Mothersbaugh 2010). Knowledge and perceptions are acquired by a combination of direct experience with an attitude object (product or service) and related information from various sources (Schiffman, Kanuk & Wisenblit 2010). This knowledge and

resulting perceptions commonly take the form of beliefs; that is, a consumer believes that the attitude object exhibits various attributes and that specific behaviour will lead to precise results (Schiffman, Kanuk & Wisenblit 2010). Beliefs about attributes are generally evaluative. For instance, beautiful colour is considered as positive, whereas ugly shape is viewed as a negative belief. Cognitive evaluation can be objective (for example 'its shape is circular') or more subjective (for instance 'its design is attractive') (Hawkins & Mothersbaugh 2010). The more positive the beliefs associated with a particular product and the more positive each belief is, the more "favorable" the overall cognitive component is likely to be. In turn, this leads to a more favorable overall attitude (Hawkins & Mothersbaugh 2010).

The affective component, related to a consumer's emotions or feelings about a particular product, forms the affective attitude (Schiffman, Kanuk & Wisenblit 2010). These emotions and feelings are frequently treated as primarily evaluative in nature; that is, they capture an individual's direct or global assessment of the attitude object (i.e., the extent to which the individual rates the attitude object as favorable or unfavorable, good or bad) (Wang 2005). Affect-laden experiences also manifest themselves as emotionally charged states (e.g., happiness, sadness, shame, disgust, anger, or surprise). Research indicates that such emotional states may enhance or amplify positive or negative knowledge and experience that may impact what comes to mind and how the individual acts (Schiffman, Kanuk & Wisenblit 2010). For instance, a person visiting a shopping centre is likely to be influenced by his or her emotional state at the time (Schiffman, Kanuk & Wisenblit 2010). If the shopper is feeling particularly joyous at the moment, a positive response to the shopping centre may be amplified (Schiffman, Kanuk & Wisenblit 2010).

Evaluation may be simply a vague, general feeling developed without cognitive information about a product (John 1988), or it may be the result of several evaluations of the product's performance on each of several attributes (Hawkins & Mothersbaugh 2010). Many beliefs about a product have associated affective reactions or evaluations. For example, a belief that an iPhone will cost $700 could produce a positive reaction (an affective statement or feeling) that 'this is a bargain'; a negative feeling- 'this is overpriced' or a neutral feeling – 'this is an average price' (Hawkins & Mothersbaugh 2010). The feeling or emotional attachment depends on

the individual and the condition (Hawkins & Mothersbaugh 2010). Individuals may evaluate the same belief differently since each has a unique motivation and personality, past experiences, referent groups and physical conditions (Hawkins & Mothersbaugh 2010). Some consumers may have a positive feeling towards the belief that an iPhone is elegant, whereas others may respond with a negative reaction (Hawkins & Mothersbaugh 2010). While feelings are seen to be the result of an evaluation of specific attributes of a product, they can precede and influence cognition (Hawkins & Mothersbaugh 2010). As will be seen later, a consumer may like a product through classical conditioning without acquiring any cognitive beliefs about the product (Hawkins & Mothersbaugh 2010). Indeed, the initial reaction to a product may be one of like or dislike without any cognitive basis for the feeling; this initial affect can then influence how consumers react to the product itself (Wang 2005).

The behavioural component is the likelihood of responding in a certain manner towards stimuli or an attitude object such as a product, service, or brand (Hawkins & Mothersbaugh 2010). Actual behaviours show these intentions since these behaviours are subsequently modified by the situation in which they occur. Intention here is viewed as a conative component of attitude (figure 2.6) and includes the actual behaviour itself (John 1984). A series of decisions to purchase or not to purchase a smartphone, or to recommend it to friends, would be the behavioural component of an attitude towards a smartphone. The behavioural component also provides response tendencies or behavioural intentions (Hawkins & Mothersbaugh 2010).

2.4.5.2. Multi-attribute attitude models

Multi-attribute attitude models describe consumers' attitudes about the attitude object (e.g. product or service) based on the beliefs held about a particular object (Fishbein & Ajzen 2010). There are four main models which develop general constructs in order to measure actual behaviour. Other research adds or deletes a construct to these frameworks based on the context of their studies. These frameworks are the attitude-toward-object, the attitude-toward-behaviour, the theory-of-reasoned-action model and the theory-of-planned-behaviour.

The attitude-toward-object model: The attitude-toward-object model is especially suitable for evaluating attitudes toward a product (or service) category or specific brands (Pecheux & Derbaix 1999). According to this model, the consumer's attitude toward a product or specific brands of a product is a function of the presence (or absence) and evaluation of certain product-specific beliefs and/or attributes. In other words, consumers generally have favourable attitudes toward those products or products they believe have an adequate level of attributes that they view as positive and they have an unfavourable attitudes toward those brands that they feel do not have an adequate level of desired attributes or have too many negative or undesired attributes. Much research has used this model to capture an individual's intention to purchase products or specific brands of products in a specific time.

The attitude-toward-behaviour model: The attitude-toward-behaviour model is designed to explore the individual's attitude toward behaving or acting toward an object rather than the attitude toward the object itself (Wu 2003). The appeal of this model is that it seems to correspond somewhat more closely to actual behaviour than does the attitude-toward-object model. For example, knowing about an individual's attitude to the act of purchasing a smartphone (i.e. the attitude toward behaviour) reveals more about the potential act of purchasing than simply knowing an attitude towards buying a specific smartphone. While a person may like a smartphone, s/he may not necessarily buy it. The problem with the attitude-toward-object model is that its focus is more on the attitude than behavioural intention. The goal in this theory is to find out what individuals think about products and what drives them to like or dislike products.

Theory-of-Reasoned–Action model: The theory-of-reasoned-action is another framework intended to find out more about the actual behaviour of customers by using the intention to perform a behaviour. As shown in figure 2.7, the theory of reasoned action represents a comprehensive integration of attitude components into a structure that is designed to lead to both a better explanation and prediction of behaviour (Fishbein & Ajzen 1975). It has been widely used to explain individual behaviour (Ajzen 2008) in different domains from exploring the purchase of familiar versus unfamiliar products (Arvola, Lähteenmäki & Tuorila 1999) to internet purchasing behaviour (Andrews & Bianchi 2013). This theory hypothesises that an

individual's stated intention to engage in a given behaviour is the most immediate predictor of that behaviour (Ajzen & Fishbein 1980).

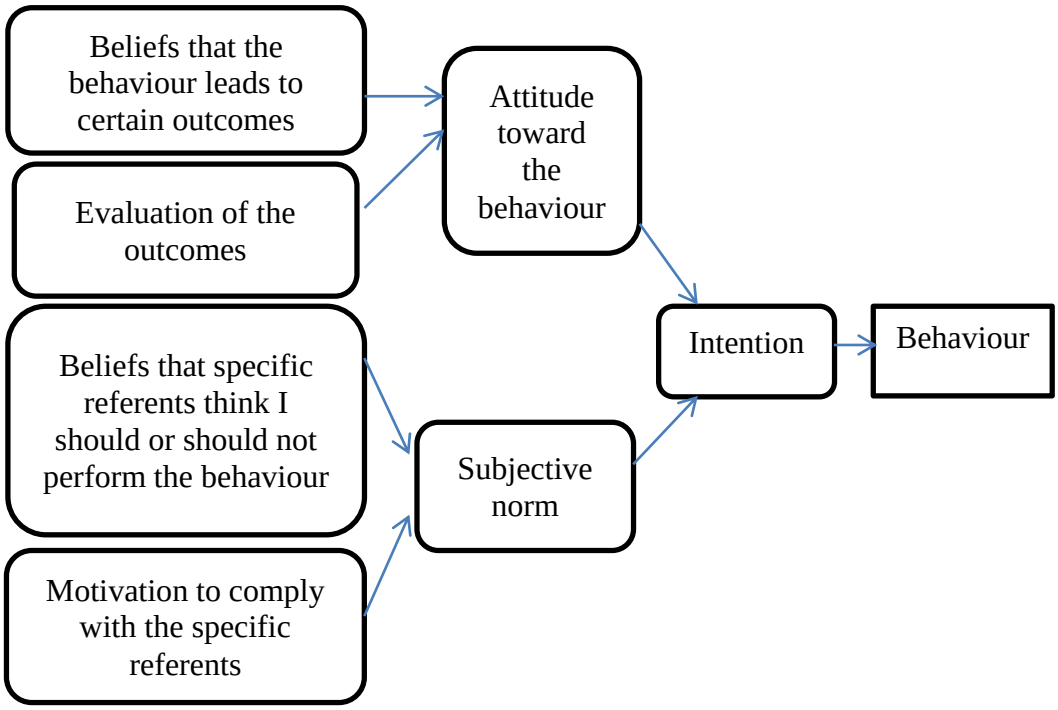

Figure 2.7. A Simple Version of the Theory of Reasoned Action (adapted from Fishbein & Ajzen 2010)

The theory of reasoned action predicts that attitude has the most influence on purchase intention and the more favourable a respondent's attitude; the more likely they are to purchase. Attitude consists of beliefs about the consequences of performing the behaviour heightened by the person's evaluation of these consequences (Fishbein & Ajzen 1975). Beliefs are representative of an individual's information about objects and how they connect with the objects' perceived attributes, characteristics and qualities (Fishbein & Ajzen 2010). For example, a person may believe that a smartphone (the object) should come in different colours (attributes). A subjective norm is seen as a combination of perceived expectations from relevant individuals or groups along with intentions to comply with these expectations. Thus, it is "a person's perception that most people who are important to

him or her think he or she should or should not perform the behaviour in question" (Fishbein & Ajzen 1975, p.302).

Thus, a person's voluntary behaviour is predicted by their attitude toward that behaviour and how they think others would view them if they performed that behaviour. A person's attitude combined with their subjective norm forms their behavioural intention. In this theory, any reasonable complex, voluntary behaviour (such as buying a smartphone) is determined by the individual's intention to perform that behaviour.

The theory of reasoned action has been continuously studied and expanded. Some researchers have argued that behaviour is closely related to strong intentions, indicated by high certainty, attitudinal rather than normative control, greater experience, self-relevance and anticipated regret for inaction (Abraham & Sheeran 2003; Sheeran & Orbell 2000).

Subsequently, Ajzen (1991) argued that behaviour seems not to be fully under control and voluntary so that the intention to perform a behaviour may be influenced by a person's awareness of their abilities to perform a given behaviour (perceived behavioural control). In order to deal with behaviours over which people have incomplete volitional control, Ajzen (1991) proposed a new framework, the theory of planned behaviour. In this framework, perceived behavioural control and self-control beliefs should be added to the theory of reasoned action framework in order to make it more effective in measuring intention. Having added perceived behavioural control to the framework, Ajzen (1991) proposed the theory of planned behaviour as an extension to improve the predictive power of the theory of reasoned action and make it more effective in measuring intention. Perceived behavioural control is defined as a consumer's perception of whether the behaviour is, or is not, within his or her control (Ajzen 2001; Ajzen & Fishbein 2005); or the perceived ease or difficulty of performing a specific behaviour (Ajzen 1991). Behavioural intention, the most immediate predictor of actual behaviour in theory of planned behaviour, represents plans to act toward desired goals (Crano & Prislin 2006) and is derived from considerations of attitudes, subjective norms and perceived behavioural control.

The theory of planned behaviour also removes the strict distinction between behaviour and behavioural outcomes by an assumption that any behaviour can be regarded as a goal (Eagly & Chaiken 1993). It suggests that behaviour is influenced by three main factors: a positive or negative evaluation of the behaviour (attitude toward the behaviour), perceived social pressure to perform or not perform the behaviour (subjective norm) and perceived capacity to perform the behaviour (perceived behavioural control) (Ajzen & Cote 2008).

2.4.5.3. Justification for using the theory of reasoned action

Since the objective of this research is about understanding how aesthetics can influence purchase intention regardless of the control behaviours that may impede an actual decision, the theory of planned behaviour is beyond the requirements of this research. I try to understand how beliefs and perceptions about an aesthetically pleasing product may lead to a purchase intention. Therefore, the theory of reasoned action can predict behaviours that are relatively under volitional control.

Also, I am not looking for whether respondents like or dislike a specific brand of product (attitude toward an object), or understand what message a brand or product could convey, or what the benefits of a product are (attitude toward behaviour model). I seek to go further and see how a variable like aesthetics can influence the perception of individuals about products and whether it could influence the intention to purchase.

A tricomponent model could be another option, as it uses individuals' thoughts, feelings, and behaviours regarding objects or stimuli in order to predict how they would act toward them in future. However, the problem with this tricomponent attitude model is that it is unclear how its components are in a relationship. There are two-way links among the cognitive, affective and conative components. It means that each component not only can influence other components but also be driven by them. Since the goal of this research is to understand how aesthetic appreciation can influence behavioural intention, the hypotheses cannot be about the two-way connection between these two components. Even the emotional response in this framework is not simply a feeling of attachment to a product. It is

more about a reaction to words, or even pictures, which can be assessed through an experimental approach. This kind of measure is perhaps more useful for advertising research and its role on arousal (Grimm 2005). Moreover, the conative component or behavioural intention can influence the cognitive and affective factors. This influence can even change and modify the attitude of respondents regarding the relationship among items. However, in this research, respondents' evaluations are based on aesthetic appreciation of an object. Once this evaluation is made, there is no reason for individuals to change their perception regarding the visual attribute of a product. Thus, the tricomponent framework is unsuitable for this research.

In this study, a simple view of the theory of reasoned action model is adapted. In this model, as shown in figure 2.8, beliefs people hold about an aesthetically pleasing item and its features could influence their purchase intention.

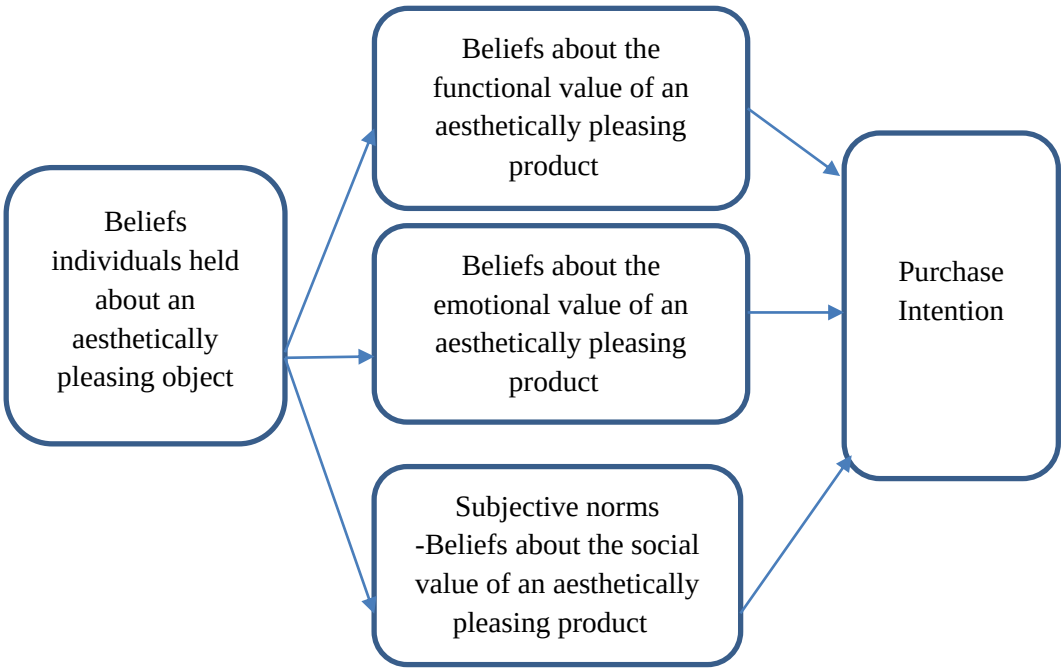

Figure 2.8. The attitude framework

Another type of belief is made from values individuals perceive in a product (Schwartz 1992; Bredahl 2001). Perceived functional value is made from beliefs individuals hold about the functionality of an aesthetically pleasing item (Davis 1989), whereas emotional reactions toward aesthetic characteristics of a product lead to the belief that customers are emotionally attached to a product (Sánchez-

Fernández & Iniesta-Bonillo 2006). This feeling is common among individuals that value beauty because it conveys the perception that an object may meet their needs (Holbrook 1999).

An individual's perception about whether s/he should intend to purchase a product is, also, influenced by the beliefs of peer groups, friends or families about that product (Ajzen & Fishbein 1972). Thus, a person's purchase intention, which is volitional, is predicted by how he/she thinks other people view him/her (subjective norms).

2.5. Research Gap

Basic product characteristics, such as functionality, can be very similar (Reimann et al. 2010) in products with both utilitarian and hedonic features (Charters 2006), requiring firms to shift their differentiation efforts away from concrete product attributes towards less tangible features such as popular colours or shapes to compete with their competitors (Brunner, Emery & Hall 2008). Aesthetics can become an important guide for customers in evaluating and distinguishing products within the same product category (Kalins 2003; Postrel 2003). Thus, in recent years there has been an increased need to understand how, where and when aesthetics acts to influence buyer's purchase intention (Hoegg & Alba 2007).

Aesthetics research in consumer psychology often focuses on advertising and product design (Patrick & Peracchio 2010), especially for product categories in which aesthetics serves as a central product feature (Bitner 1992). It has been studied in different contexts, such as in the service environment (Bitner 1992) and consumer products (Baisya & Das 2008). Despite the richness of the literature on aesthetics, only a limited number of studies have researched the factors influencing aesthetic appreciation of a product (Hoyer & Stokburger-Sauer 2012; Baisya & Das 2008) and the role of aesthetics on purchase decisions (Turel, Serenko & Bontis 2010).

Consequently, researchers have focused on fundamental questions in this area, such as how aesthetics influences customers' intention to buy a product (Holbrook & Zirlin, 1985; Veryzer & Hutchinson 1998). Users first perceive this value by appreciation of the colour, design and feel of a product (Boztepe 2007).

Aesthetics is treated as a cue to the perceived value of an object. Individuals value these cues for what they "signify" (Boztepe 2007, p.56). For example, as an indicator of social status, prestige and identity (Boztepe 2007) or superior quality, which influences their purchase decisions (Dodds & College 1995). Although research in the context of theory of reasoned action has tried to understand what decision process potential customers follow and what value they perceive in purchasing a product (Turel, Serenko & Bontis 2007), it does not consider non-instrumental predictors such as emotional or social value and neither does it focus on how aesthetics could influence buyers' decisions through different forms of perceived value of a product. While there is a need to develop a conceptual framework developing the basic issues regarding consumer aesthetics and guiding the design and interpretation of empirical research (Olson 1981), there is a theory deficiency describing the process of how aesthetics influences customers' purchase intention of this category of products. Using the theory of consumption.-value created by Sheth, Newman & Gross (1991b) and modified by Sweeney and Soutar (2001) can be helpful to understand and describe how aesthetics can influence buyers to choose a product. Since some customers are value-driven (Levy 1999), in order to achieve marketplace advantage companies must find out the value customers' perceive most highly (Woodruff 1997). Thus, understanding the process undergone by consumers from their appreciation of a smartphone as aesthetically pleasing to their purchase intention is critical.

The intention of this study is to understand how and to what extent aesthetics can influence purchase intention in the product category of smartphones. A full examination of all possible antecedents, including factors such as cultural differences, is excluded in order to limit the scope of the study.

2.6. Research Questions

Q1.What are the attributes of aesthetics?

As previously discussed, this study selected a framework developed by Swilley (2012). In this framework, all variables are related to the physical attributes of a product and have been validated in prior research. However, we try to examine

whether features such as touch, design, colour and shape can be verified as variables for a specific product, smartphones. In the following discussion, the reasons behind using these attributes as dimensions of aesthetics are explained in detail.

Touch: Tactile information can affect the aesthetic quality of a product (Jansson-Boyd & Marlow 2007) and customers often count on the information they gain through tactile input (Holbrook 1983), especially when there is not any information regarding a product. This is especially the case for products such as portable electronics (e.g., smartphones) where tactile input is critical for use (McCabe & Nowlis 2003). Touch can bring a positive response, which induces liking and preference for a product (Mehrabian 1981).

Design: As an important determinant of new product success, design plays an important role for companies to differentiate themselves from competitors (Bloch 1995). The sensory pleasure is made by the appreciation and usage of well-designed products (Bloch 1995) and since it is about the physical form and visual appeal of a product, design relates to aesthetics (Veryzer 1995).

Colour: As a tool of communication between humans and their surroundings, colour has a critical role in aesthetics and design (Şahin Ekici & Yener & Camgöz 2006; Hard & Sivik 2001). It is defined as "an inherent property of all materials and surfaces including everything from light and paint, to art, from aesthetics to functionality" (Dalke et al. 2006, p.343). When we say, 'colour' we are often talking about hue and whether an object's colour looks as expected (Aslam 2006). A colour's tone or hue, like brightness, not only can be used as a meaning predictor, but also can change the perception of customers regarding the quality of products (Hupka et al. 1997; Kauppinen-Räisänen & Luomala 2010). Colour, thus, is a distinctive attribute of a product, which can make it aesthetically pleasing (Grossman & Wisenblit 1999).

Shape: As a part of aesthetics, the shape of a product can influence and affect perception of customers (Raghubir & Greenleaf 2006) and their purchase decisions (Sherwood 1999). It is linked to increasing the overall satisfaction of customers and can convey 'luxuriousness', 'attractiveness' and 'harmoniousness' of phones (Han et al 2004, p.28). Thus, the shape of a product has become one of the

most important elements for distinguishing it from others (Swilley 2012). For instance, Apple and Samsung phones are rounded rectangles; Motorola is eight-sided, whereas Nokia is cuboid with rounded corners.

Q2. How does 'aesthetics' influence 'purchase intention'?

It is not clear for products that are likely to have h both utilitarian and hedonic characteristics, like smartphones, how aesthetics influences the consumer purchase decision. Aesthetics may influence purchase intention either directly or indirectly, via components of perceived value such as functional, emotional or social value. Therefore, this study will examine whether and how aesthetics influences perceived value in smartphones.

Q2.1. Does aesthetic appreciation of a smartphone have a direct link with purchase intention?

Aesthetics has been used as an element of perceived value in some research. For example, as a dimension of overall value, aesthetics is used to evaluate its indirect link with behavioural intention to use virtual artifacts such as ringtones (Turel, Serenko & Bontis 2010). Gallarza & Gil Saura (2006) applied it to understand whether it influences satisfaction and purchase intention in the travel industry. It is also employed in internet shopping settings to measure its influence on customers' decisions while shopping online (Mathwick, Malhotra & Rigdon 2001). Moreover, aesthetics has been treated as giving solely hedonic value and has been found to have a direct association with purchase intention (Lee & Koubek 2010; Tzou & Lu 2009). Aesthetic principles influence a consumer's initial evaluation of a design. This can become a major factor in products designed to emphasise aesthetic aspects and to fulfil customers' expectations through the experience of beauty and sleek appearance (Kumar & Garg 2010).

Accordingly, it is expected that aesthetics can cause higher levels of positive perception, which may lead to buyers' purchase intention. However, aesthetics has also been found to have an indirect link to purchase intention via factors determining technology acceptance (Van der Heijden 2003).

Q2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via different dimensions of perceived value?

The aim of this study is to find out whether aesthetics influences buyers' decisions indirectly based on the value they perceive. Obtaining value is a key purchase goal and central to all successful exchange transactions (Holbrook 1994). Perceived value has been described as not only a strong predictor of behavioural intention, but also as an outcome of marketing activities (Cronin, Brady & Hult 2000). Customers choose products they perceive as the best value. Thus, delivering products with superior value leads to purchase intention and customer loyalty, the driver of financial performance (Smith & Wright 2004). Therefore, it is an important antecedent influencing consumer purchase intention (Turel, Serenko & Bontis 2010; Sweeney & Soutar 2001). The more value a product offers to customers, the more successful the product is likely to be (Jang, Dickerson & Hawley 2005) and the higher the purchase intention. (Monroe & Krishnan 1985). Thus, to find out if it can influence buyers' decisions through different dimensions of perceived value, we have to investigate how different elements of perceived value (comprising functional, social and emotional value) influence the purchase decision.

Q2.2.1 Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via functional value?

Functional value as a utilitarian factor can influence consumers' perceptions of a product's quality and functions (Sheth, Newman & Gross 1991b; Yang & Jolly 2009; William & Soutar 2009; Callarisa et al. 2009; Callarisa Fiol, Moliner Tena & García 2011; and AR 2012) and satisfy their needs, wants and desires. Previous studies suggest that consumer perceptions about functional value have a strong, positive relationship with purchase intention (Tsiotsou 2006; Bhaskaran & Sukumaran, 2007; Gill, Byslma & Ouschan 2007). Since it brings value to the consumer, it is used as a strategic differentiation tool to build competitive advantage (Wang 2010). Aesthetics has influenced consumer decisions via utilitarian characteristics of products in different information system contexts, such as the usage of websites (Van der Heijden 2003), human–computer interaction (Tuch et al. 2012; Lee & Koubek 2010; Lee & Jun 2007) and mobile commerce (Cyr, Head &

Ivanov 2006). However, in the mobile technology area, there is little research investigating the association of aesthetics with functional attributes, although it has been argued that customers may assume that products with an attractive design are functionally superior (Chaiken & Maheswaran 1994).

Q2.2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via social value?

Social value stems from the product's ability to reinforce a social self-concept (Sweeney & Soutar 2001). People prefer to buy products that are accepted by a certain social group or to follow social norms (Wang 2010) in order to distinguish their identities and obtain the product's social value (Park, Jaworski & MacInnis 1986).

Positively perceived social value leads to a higher buying intention (Vigneron & Johnson, 1999; Gill, Byslma & Ouschan 2007). Previous studies show that consumers who interact with product categories that visibly represent values about themselves may be guided by this interaction to purchase (Goldsmith, Frieden & Henderson 1995). Furthermore, while much research has investigated the role of social value on purchase decisions (Sheth, Newman & Gross 1991b; Sweeney and Soutar 2001; Sánchez-Garcia et al. 2007; Callarisa Fiol et al. 2009 and 2011; Chi & Kilduff 2011), there is a paucity of research investigating if aesthetics can influence purchase decisions via social value. For instance, when a product is visually appealing, will customers presume it will have a good impression on others and decide to buy it?

Q2.2.3. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via emotional value?

The consumer decision-making process is affected by emotional factors. Emotion has a significant impact in evaluation and judgment leading to satisfying customers' psychological needs (Bagozzi, Baumgartner & Pieters 1998). Emotional value has been identified in many contexts as an important influence when purchasing (Turel, Serenko & Bontis 2010, Van der Heijden 2003). The more positive the evaluation is, the more likely that purchase intention will occur (Tzou &

Lu 2009). Thus, aesthetics could influence purchase intention through emotional value acting as a mediator, stimulating the emotional bonding to a product (Tzou & Lou 2009; Lee & Koubek 2010). Here I have to assess whether aesthetic appreciation of a smartphone can lead to purchase intention when respondents are emotionally attached to them. When a product evokes pleasure that similar products do not, that product may appear superior which will affect the customer decision to purchase (Mugge, Schifferstein & Schoormans 2008).

In short, the research gap identified and supported by the literature review is that there is little research explaining how aesthetics influences purchase intentions for this product. We need to investigate whether aesthetics has a direct effect on purchase intention or relates to it via different dimensions of value perceived by customers. Based on a review of the literature, the hypotheses below focus on the links proposed in the theoretical framework shown in figure 2.9.

H_1: Aesthetics has a positive impact on Purchase Intention.
H_2: Functional Value is a mediator between Aesthetics and Purchase Intention.
H_3: Emotional Value is a mediator between Aesthetics and Purchase Intention.
H_4: Social Value is a mediator between Aesthetics and Purchase Intention.

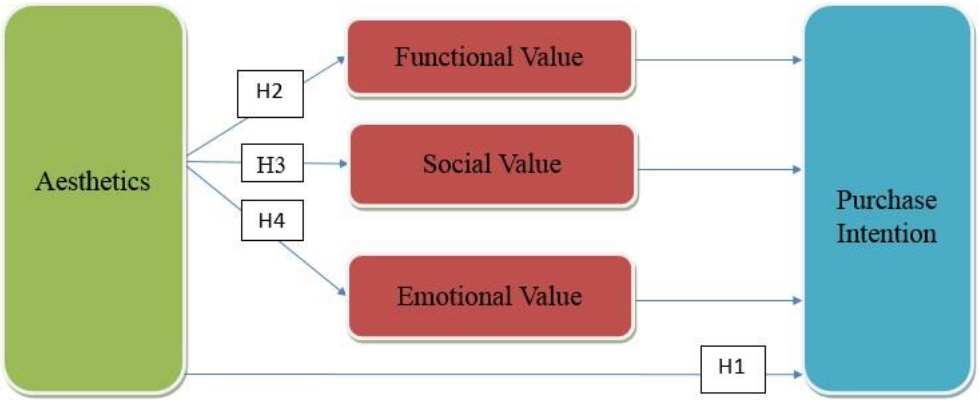

Figure 2.9. The proposed theoretical model

2.7. Research Objectives

If the research questions are successfully addressed, this study will achieve the following research objectives:

1. The study will contribute to understanding the attributes of aesthetics for smartphones.
2. For this particular product and hopefully indicative for its product category, the study will establish the strength of association between an individual's aesthetic appreciation of a smartphone and his/her purchase intention.
3. The study will contribute to theory by identifying alternative processes by which aesthetics influences buyers' intention to purchase this product; in particular clarifying how aesthetics influences perceived value.

2.8. Conclusion

This chapter presented a review of the extant literature and described the foundations underlying the theoretical framework relevant to the research problem. On the basis of the research gaps identified in this chapter, a theoretical framework was developed for this research. The chapter outlined the main constructs to be used in this study. Different theories were reviewed which help explain the relationship between the constructs in the research model. Seven research questions and four research hypotheses (listed in table 2.6) were proposed to guide data collection and analysis. The next chapter will present the details and justification for employing the chosen research method.

Table 2.6. Summary of research issues and hypotheses

Research Questions	Research Hypotheses
Q1.What are the attributes of aesthetics?	
Q2. How does aesthetics influence purchase intention?	
Q2.1. Does aesthetic appreciation of a smartphone have a direct link with purchase intention?	H_1: aesthetics has a positive impact on purchase intention.
Q2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via components of perceived value? Q2.2.1. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via functional value? Q2.2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via social value? Q2.2.3. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via emotional value?	H_2: Functional value is a mediator between aesthetics and purchase intention. H_3: Social value is a mediator between aesthetics and purchase intention. H_4: Emotional value is a mediator between aesthetics and purchase intention.

Chapter 3
Research Methodology

3.1. Introduction

Chapter 3 presents the methodology used to examine the proposed model outlined in the previous chapter. Following the introduction, section 3.2 discusses the research method employed and justifies the choice of a mixed methodology. Section 3.3 gives an outline of the plan of the research. Section 3.4 provides the details of the exploratory research undertaken and sections 3.5 and 3.6 explain the quantitative stage of study. This chapter also presents details for testing the measurement model (section 3.7), analysis of data using Partial Least Square (PLS) and ethical issues (section 3.10) considered before commencement of the study.

3.2. Research Method

This section presents the research design used to find out what the attributes of aesthetics are and how does aesthetics influences perceived value and intention to purchase a smartphone? A research design is essential in order to plan an approach that will best answer the research questions and ensure the validity of the result (MacNee 2004). The research instruments are developed to explore the associations proposed in the conceptual framework. A mixed method will be used in this study to respond to the research questions.

Since the results from one method can help identify respondents to study or questions to ask for the other method (Tashakkori & Teddlie 1998), mixing two methods in the same study can in fact result in strengthening both methods (Creswell & Plano Clark 2007) and create “a very powerful mix” method (Miles & Huberman 1994, p.42). Mixed methods as a pragmatic research paradigm (Johnson, Onwuegbuzie & Turner 2004) combine elements of both positivist (quantitative) and interpretive (qualitative) philosophies “for the broad purposes of breadth and depth of understanding and corroboration” (Creswell 2012, pp.537-8).

The use of a positivistic approach is fruitful for any study. It can produce applicable knowledge that is externally valid (Kim 2003) and lead to tangible and positive outcomes (Alan 1997; Swanson 1992). While designing a research methodology, researchers have to clarify whether both qualitative and quantitative approaches are used at the same time (convergent parallel design) to confirm the result of the other approach. They can even use two theories sequentially (explanatory and exploratory sequential designs), or together (embedded design) (Creswell 2012, pp.540-5).

This research uses a sequential mixed method with a dominant quantitative approach (Johnson et al. 2007). It begins with a qualitative focus group for exploratory purposes and follows up with a quantitative method so that I can generalize findings. The research process begins by undertaking exploratory research that involves a focus group. The feedback at this stage, along with the information gathered during the literature review stage, contributes towards finalising the research constructs. The second stage is divided into two sections. The first comprises a pilot study, including online questionnaires, sent to a small group of respondents. In line with the results from the pilot study, the questionnaire and the survey methodology are further refined.

3.3. Outline of the research plan

This section discusses the overall plan for this research, which is summarised in figure 3.1.

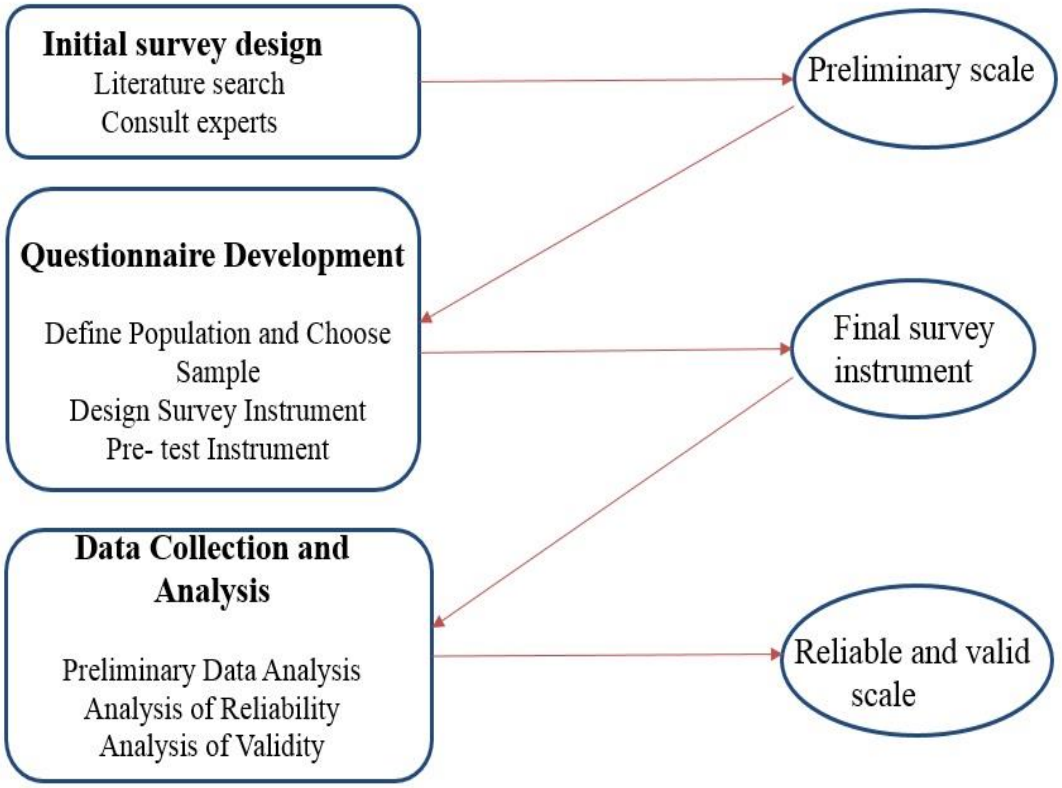

Figure 3.1. Identified scale development process adapted from Hensley (1999)

Having made a preliminary scale by reviewing the literature (initial survey design-figure 3.1), I designed a survey instrument. To design a proper survey, the research should evaluate the instrument based on the criteria below (Kitchenham & Pfleeger 2002; Bailey & Pearson 1983) (Questionnaire development-figure 3.1):

1. Check that the questions are understandable.

2. Assess the likely response rate and effectiveness of the follow-up procedures.

3. Evaluate the reliability and validity of the questionnaire.

4. Ensure that the data analysis techniques match the expected responses.

There are two common approaches to evaluate research instruments: focus groups and pilot studies (Kitchenham & Pfleeger 2002). In order to follow these two

approaches, the research uses a two-step approach, integrating the two basic types of research design; qualitative and quantitative research (Malhotra 2010) (figure 3.2).

Stage 1 involves exploratory research, in which the aim is to gain insights and ideas on the main concepts of the study (figure 3.2). Despite a growing body of literature on the topic of aesthetics, very limited research (e.g. Cronin, Brady & Hult 2000; Turel, Serenko & Bontis 2010; Monroe & Krishnan 1985) has examined the effects of it on purchase intention. Thus, the focus group was undertaken because the research topic was seen as "unfamiliar" (Zikmund 2003, p.120) and little was known about the overall situation (Malhotra 2010). For different stages, different populations were defined which would be discussed in detail in a future section.

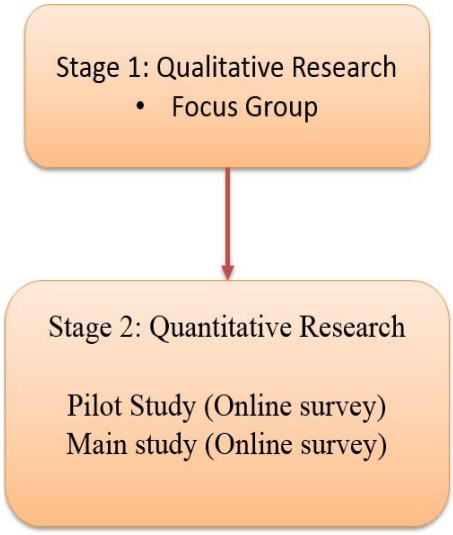

Figure 3.2. An outline of the research design for the current research project

Stage 2 includes quantitative research that consisted of a pilot study followed by an online survey. There are a number of reasons why results from an exploratory study would not be seen as being conclusive. Exploratory research tends to be unstructured and carried out on a small, often unrepresentative sample so that findings are often regarded as tentative (Malhotra 2010). Quantitative research, on the other hand, can assure objectivity by using numbers and statistical methods to seek explanations and predictions, which can be generalised to other persons and places (Glesne & Peshkin 1992). It can provide testing of causal hypotheses, along with a general description of the phenomena, in such a way that it should be easily replicable by other researchers (King, Keohane & Verba 1994).

3.4. Stage 1: Qualitative research: Focus group

Variable measurements used in previous research needed to be modified for relevance to the study's context. Although, the main objective of the focus group is giving a useful breadth of views at once (Greenbaum 2003), participants are not under pressure to have a consensus opinion (Bloom 1989). A focus group approach was preferred to in-depth interviews because it allowed group interaction and discussion (Burns 1989; Albrecht et al. 1993). It is justified as a convenient way to get the outlook of a wider number of people (Robson & Foster 1989) (Table 3.1).

Focus groups can be used as a pilot study to prepare a survey to explore an unknown dimension of the topic of interest (Bloor et al. 2001). Furthermore, for an exploratory approach that calls for a detailed understanding of a consumer perspective, a focus group is a better approach (Stokes & Bergin 2006). I used a focus group to discuss a proposed questionnaire, remove any vague or unclear points from it and unpack proposed constructs to uncover their underlying dimensions (Bruhn, Georgi & Hadwichs 2008).

3.4.1. Participants of focus group

The researcher used purposive sampling technique to identify "key informants whose context-specific knowledge and expertise regarding the issues relevant to the research are significant and information-rich" (Johnson et al. 2007, p.25). A purposive sampling technique includes a smaller sample size because at the exploratory research stage it is a 'quick, inexpensive method' to gain an insight into the experts' opinion (Hornik & Rubinow 1981). Therefore, flyers regarding the aim, date and time of the focus group were distributed at University of Western Sydney (Parramatta Campus). The researcher tried to recruit the focus group panel from individuals who had smartphones and had used them before. Since people in different age groups study and/or work at the university, it could be a good place to recruit a focus group panel.

Potential participants were encouraged to inform any other person who had a smartphone about the panel and ask them if they would like to participate in the

focus group. The sample was chosen from people who belonged to different age groups and different educational backgrounds in order to receive different ideas about the questionnaire and omit any bias. The researcher chose people with whom he did not have any conflict of interest. Participation was voluntary and participants could leave the focus group session whenever they wanted. In view of this aim, information was gathered from eight individuals from different age groups and educational backgrounds (table 3.1) to include a variety of perspectives.

Table 3.1. Participants' information

No	Age	Education	Degree
1	37	Accounting	Bachelor
2	31	Marketing	PhD
3	23	Economics	Master
4	29	Law	Bachelor
5	30	Management	PhD
6	22	Civil engineering	Bachelor
7	26	IT	Diploma
8	42	Marketing	Diploma

3.4.2. Feedback on the survey questionnaire

Respondent feedback on the survey instrument concentrated on the five main types of errors usually made regarding questions and their wording (Hunt, Sparkman & Wilcox 1982). These errors are loaded questions, double-barrelled questions, ambiguous questions, inappropriate vocabulary or questions with missing alternatives. Thus, the questionnaire was evaluated based on these possible errors.

3.4.2.1. Revising items for aesthetics

A missing alternative was found for the educational section in which participants were asked to add "not applicable" to the alternatives for each question. They found one request vague and asked for some examples. They found some "double questions" and asked to delete them. Participants raised some issues

regarding inappropriate words and missing alternatives for some items in the aesthetic construct category. Table 3.2 shows Swilley's measurement items for aesthetics.

Table 3.2. Swilley's (2012) items for aesthetics

Item number	Item in focus group study
Colour 1	Technology products should come in different colours
Colour 2	The colour of a technology product means a lot to me
Colour 3	A technology product should have an accent colour
Colour 4	I should be able to choose the accent colours on a technology product
Colour 5	A technology product should come in bright colours
Colour 6	The colour of a technology product is desirable
Design 1	I should be able to design a technology product the way I want
Design 2	The design of a technology product should be unique to me
Design 3	The design of a technology product means a lot to me
Design 4	The design of a technology product should be attention getting
Beauty 1	A technology product should be beautiful
Beauty 2	The beauty of a technology product means a lot to me
Shape 1	I like the shape of technology products
Shape 2	The shape of a technology product should be pleasing to the eye
Shape 3	I enjoy looking at the shape of a technology product
Touch 1	The feel of a technology product is very important to me
Touch 2	I like the feel of a technology product
Touch 3	The texture of a technology product means a lot to me

Furthermore, Table 3.3 shows the extent of item modifications undertaken for different items.

Table 3.3. Item modification of aesthetics

Item number	Item in focus group study	Revised items for Pilot study	Specific change(s)
A4	A smartphone should have accent colours	A smartphone should not have contrasting colours that highlight its presence.	Simplify wording: use of everyday language- reversed item used
A6	A smartphone should come in bright colours	A smartphone should come in bright colours such as red, orange and yellow	More clarity
A7	Smartphones should come in muted colours	Smartphones should come in muted colours such as brown, black and beige	More clarity
A8	The colour of my smartphone should be attention getting	The colour of my smartphone should not be attention getting	Changed to reverse item
A10	I should be able to personalize my smartphone the way I want	I should be able to customize the setting or interface of my smartphone the way I want	Simpler/ Clearer phrases and wordings introduced
A13	The design of my smartphone should be attention getting	The design of my smartphone should not be attention getting	Changed to reverse item
A15	The beauty of my smartphone means a lot to me	----	Double question error- deleted
A17	The shape of my smartphone should be pleasing to the eye	The shape of my smartphone should not be pleasing to the eye	Changed to reverse item
A20	The feel of my smartphone is very important to me	The feel I get from my smartphone is very important to me.	Simpler/ Clearer phrases and wordings introduced
A23	I am more concerned with the capability of my smartphone rather than its looks	I am more concerned with the capability of my smartphone such as playing games or running different programs at the same time rather than its looks	More clarity
		The weight of the smartphone means a lot to me	Additional item- added
		The design of a smartphone is a determinant of its success in the marketplace	Additional item- added

3.4.2.2. Revising items for dimensions of perceived value

As seen in table 3.4, some problems were seen with the five main types of errors for perceived value.

Table 3.4. Item modifications for components of perceived value

Item number	Item in focus group study	Revised items for Pilot study	Specific change(s)
B1-functional value	I want a smartphone with the highest quality	----------	Vague item deleted
B2. functional value	I want a smartphone that is well-organized/ made	I want a smartphone with a layout, which is easy to follow.	Clearer phrases and wordings justified for this context
B6- functional value	I want a smartphone that is useful based on its capability	I want a smartphone that is useful based on its capability, like a powerful processor or running different programs at the same time	Clearer phrases and wordings introduced- More clarity
functional value		I want a smartphone that is versatile like being good for texting and calling	Additional functional value item introduced
C1- social value	Approval of my smartphone by families, friends, or co-workers/peers	I seek the approval of my smartphone by families, friends, or co-workers/peers	Clearer phrases and wordings introduced
C2-social value	Acceptance by my peer group, or family	I seek the acceptance of my smartphone by either my peer group or family	Clearer phrases and wordings introduced
C3-social value	Improving the way I am perceived by my peer group or family	I seek to use my smartphone to improve the way I am perceived by my peer group or family	Clearer phrases and wordings introduced

Item number	Item in focus group study	Revised items for Pilot study	Specific change(s)
C4-social value	Impressing others	I seek to impress either my family, friends or co-workers/peers through the purchase of my desired smartphone	Clearer phrases and wordings introduced
C5-social value	The smartphone that is very well considered by either my friends, family or co-workers	I seek to buy a smartphone that either my family, friends, co-workers /peers select/s	Clearer phrases and wordings introduced
C6-social value	Choosing a smartphone that can be an expression of myself	I seek to buy a smartphone that can be an expression of myself	Clearer phrases and wordings introduced
D6-emotional value	Being noticed by others when using my smartphone is important to me	Being noticed by others while using my smartphone is important to me	Clearer phrases

Editing the questionnaire, I divided it into different sections and numbered each question with a section (Malhotra, Agarwal & Peterson 2012). Questions were placed in order to ensure that the most specific questions related to aesthetics were asked at a later point while the general questions related to demographic came earlier on.

3.5. Stage 2: Quantitative research

Quantitative research is frequently referred to as hypothesis-testing research (David & Sutton 2004). Since the aim is to develop and test a model that provides in-depth understanding of how aesthetics influences consumer intention to purchase smartphones and analysing the data statistically, quantitative research is an appropriate approach for this study.

This section will present the results from the pilot study and justify the survey methodology. This is followed by a description of the process for the questionnaire design. The questionnaire design section justifies the use of a web-based survey and the steps taken to ensure the integrity of the data collected from

online panels. Although this study intends to use previously validated measures, further reliability and validity tests will be conducted.

3.5.1. Part A. Pilot Study-Pretest

Before running the main data collection, I administered a pilot study (Teijlingen & Hundley 2001). A pilot study is commonly used to pre-test or try out a research instrument (Baker 1994, pp. 182–183; Polit, Beck & Hungler 2001, p.467). De Vaus (1993, p.54) suggests using it "to see if there are any ambiguities or if the respondents have any difficulty in responding." A pilot study gives warning where research protocols might not be followed, or whether proposed methods or instruments are inappropriate or too complicated. Pilot testing ensures that the research instrument can be used properly and that the information obtained is consistent.

Fink and Kosekoff (1985) suggested revising an instrument when respondents fail to answer questions or give several answers to the same question, or write comments in the margin, because these indicate suspect reliability. Baker (1994) suggests a sample size of 10–20% of the actual study as an acceptable number of participants to consider enrolling in the pilot.

Thus, 200 questionnaires were sent out to respondents in an email or Facebook message that included a clickable hyperlink to Survey Monkey. Sixty-five people filled out the questionnaire, showing a 30% completion rate. The panel was representative of all age groups and was similar to the final study. I used the snowballing technique in order to get access to a large number of respondents in a short time.

The purpose of the pilot study was to verify whether there are any problems with the final questionnaire and to ensure word clarity and easily understood questions, estimate time required to complete the questionnaire and address any comments or suggestions respondents might have. The questionnaire was edited in response to the comments and suggestions from the pilot study as follows:

1. Several questions were deleted. However, it was made sure that at least three measurement statements (Hair et al. 2010) measured each constructs,

2. Some of the measurement statements were rephrased to make them succinct and more precise without changing their meaning.

In sum, as a result of the pre-test, two items that did not contribute to the study were deleted (tables 3.4 and 3.5). The majority of changes pertained to rewording, sorting and elimination of some questions to make the questionnaire more applicable to an Australian setting (table 3.5).

Table 3.5. Item modification for pilot study

Item number	Item in focus group study	Revised items for Pilot study	Specific change(s)
A4		I should be able to choose a smartphone that is multi-coloured	Additional Aesthetic item introduced
A31	The senses conveyed by my smartphone such as coolness to touch are very important to me	The coolness of touch of my smartphone is very important to me	Clearer phrases and wording introduced
		The texture of my smartphone means a lot to me	Additional aesthetic item introduced
A28	The durability of my smartphone is very important to me		Inappropriate item for aesthetics-deleted
A10	I should be able to customize the setting or interface of my smartphone the way I want		Inappropriate item for aesthetics-deleted

The pilot study also suggested that more time would be needed to collect the data in the main study (20 minutes) than that which had been originally allotted (15 min) (McDermott, Vincentelli & Venus 2005). In sum, the pilot study was able to highlight some of the issues and limitations with the items.

3.5.2. Main Study

The findings from the pilot study were used to improve the research instrument and to revise sections of the research design (Johanson & Brooks 2009) before carrying out the main study. Given below are the main steps the researcher undertook.

3.5.2.1. Construct Operationalisation

As a first step towards construct development (Hair et al 2010) and in view of the pilot findings of ambiguity in the elicitation of some constructs, it was important to follow Neuman's (2000) process of conceptualization and to recheck all definitions of concepts. Furthermore, using the experience from the smaller scale study, the researcher made sure that the definitions were clear, specific and unambiguous. This stage also examined a construct's 'dimensionality' (Hair et al. 2010). Tables 3.6 to 3.16 give the theoretical and operational definition for each construct used in this research. All constructs are measured on a five-point Likert scale. Each construct's indicators or measures have also been identified.

All indicators used in this study are well established in the marketing literature. Consequently, the measures align well with the conceptualised definition of the constructs. The appropriateness of each measure is also justified in this chapter. As seen in table 3.6, I use the Blackburn (1994) and Charters' (2006) definitions of aesthetics in order to cover all aspects of aesthetics. Three main constructs, colour, design and overall appearance and three sub-constructs, texture, beauty and shape, were used as the determinants of aesthetics.

Table 3.6. Conceptualization and operational definitions, survey items and scales used for aesthetics

Construct	Conceptual Definition	Operational Definition	Sub-Constructs	Scales
Aesthetics	Aesthetics is "the study of the feelings, concepts and judgments arising from our appreciation of objects considered beautiful" (Blackburn 1994, p.8) through any of the five senses (Charters 2006).	Measured by six variables (Sub-constructs)	Colour	Interval scale
			Design	
			Overall appearance	
			▪ Texture/ Touch	
			▪ Beauty	
			▪ Shape	
			Constructs adapted from Swilley (2012)	

Table 3.7 shows the items, adapted from Swilley's work, used for measuring colour. I use an interval scale to measure colour and Likert scale type questions in order to measure the extent of agreement with statements.

Table 3.7. Conceptualization and operational definition, survey items and scales used for colour

Construct	Sub-construct	Description	Operational Definition	Survey items	Scales
Aesthetics	Colour	Colour affects aesthetic responses to an object	Measured by the extent of agreement with statements in a Likert scale about the general perception about colour.	1. I do not care about the colour of my smartphone.	Interval
				2. Smartphones should come in different colours.	
				3. The colour of my smartphone means a lot to me.	
				4. I should be able to choose a smartphone that is multi-coloured.	
				5. A smartphone should not have contrasting colours that highlight its presence.	
				6. Smartphones should not come in bright colours such as red, orange and yellow	
				7. Smartphones should come in muted colours such as brown, black and beige	
				8. The colour of my smartphone should not be attention getting.	
				9. The colour of my smartphone should not be desirable.	
				Constructs adapted from Swilley (2012)	

Design as a determinant of aesthetics and a product's success in the market is measured through three items (table 3.8). The interval scale was also used to measure design and I used Likert-scale type questions.

Table 3.8. Conceptualization and operational definition, survey items and scales used for design

Construct	Sub-construct	Description	Operational Definition	Survey items	Scales
Aesthetics	Design	Design of a product affects aesthetic responses to an object	Measured by the extent of agreement with statements in a Likert scale about the general perception about design	10. The design of my smartphone based on what is available such as its shape, size and weight should be unique to me	Interval
				11. The design of my smartphone means a lot to me.	
				12. The design of my smartphone should not be attention getting.	

The next item regarding the measurement of aesthetics is overall appearance. It is measured via three Likert measurement items (table 3.9). "Appearance" can influence the consumer's perception of function and ease of use (Swilley 2012).

Table 3.9. Conceptualization and operational definition, survey items and scales used for overall appearance

Construct	Sub-construct	Description	Operational Definition	Survey items	Scales
Aesthetics	Overall appearance	The appearance of a product influences consumer perception of quality, function and ease of use	Measured by the extent of agreement with statements in a Likert scale about the general perception about overall appearance	21. The overall appearance of my smartphone means a lot to me.	Interval
				22. I am more concerned with the capability of my smartphone such as playing games or running different programs at the same time rather than its looks.	
				23. The look of a smartphone product can become outdated quickly (the shape, weight and screen)	

The shape of the sides of a smartphone is used as a dimension of aesthetics. I used four Likert type measurement items in order to measure shape (table 3.10).

Table 3.10. Conceptualization and operational definition, survey items and scales used for shape

Construct	Sub-construct	Description	Operational Definition	Survey Questions	Scales
Aesthetics	Shape	The ratio of the sides of a rectangular product or package can influence influence perceptions of its aesthetics	Measured by the extent of agreement with statements in a Likert scale about the general perception about shape	15. I like the shape (square, oval, smooth edge) of my smartphone.	Interval
				16. The shape of a smartphone should not be pleasing to the eye.	
				17. I should enjoy looking at the shape of my smartphone.	
				18. The shape of a smartphone means a lot to me.	

Touch as another measurement construct of aesthetics is evaluated via four measurement items (table 3.11). These items are Likert type statements evaluating whether respondents agree or disagree with each item.

Table 3.11.Conceptualization and operational definition, survey items and scales used for touch

Construct	Sub-construct	Description	Operational Definition	Survey Questions	Scales
Aesthetics	Touch	An object that is pleasing to touch will influence perceptions of its aesthetics.	Measured by the extent of agreement with statements in a Likert scale about the general perception about touch	19. The feel (perception by or as if by touch; sensation) I get from my smartphone is very important to me.	Interval
				20. The texture of my smartphone means a lot to me.	
				29. The feel of the surface of my smartphone such as its smoothness is very important to me.	
				30. The coolness of touch of my smartphone is very important to me.	

Swilley used beauty as another measure of aesthetics (table 3.12). As a determinant of aesthetics, it brings awe or thrill (Konecni 2005) when a product is aesthetically pleasing. Beauty is measured via two Likert type scale items.

Table 3.12.Conceptualization and operational definition, survey items and scales used for beauty

Construct	Sub-construct	Description	Operational Definition	Survey Questions	Scales
Aesthetics	Beauty	aesthetics is a perception of beauty and arouses awe, thrill and chills (Konecni 2005)	Measured by the extent of agreement with statements in a Likert scale about the general perception of beauty	14. The aesthetics of my smartphone means as much to me as its technology	Interval
				26. The beauty of my smartphone means a lot to me.	

Having reviewed all the dimensions of aesthetics the next step is the conceptualization of perceived value. Thus, items related to functional, social and emotional value are described in continuing sections.

As the “utility derived from the perceived quality and expected performance of the product” (Sweeney & Soutar 2001, p.211), functional value is also used to measure the value that maybe gained from the functional attribute of a smartphone (Table 3.13). Eight Likert-type items are used to measure functional value.

Table 3.13. Conceptualization and operational definition, survey items and scales used for functional value

Construct	Conceptual Definition	Operational Definition	Survey items	Scales
Functional Value	"the utility derived from the perceived quality and expected performance of the product" (Sweeney & Soutar 2001, p.211)	Measured by the extent of agreement with statements in a Likert scale about the general perception about functional value	1. I want a smartphone with a layout which is easy to follow.	Interval
			2. I want a smartphone with the highest reliability.	
			3. I want a smartphone with the high degree of functionality.	
			4. I want a smartphone which is easy to use.	
			5. I want a smartphone which is useful based on its technical capabilities like a powerful processor or running different programs at the same time.	
			6. I want a smartphone which is durable in terms of damage protection or battery life.	
			7. I want a smartphone with many different software applications for different purposes.	
			8. I want a smartphone that is versatile like being good on texting and calling.	

Furthermore, social value, as another measurement of perceived value, is used to measure the value that may be acquired from association with one or more social groups (Sheth al, 1991b). It is measured via six Likert type scale measurement items used by Sweeney and Soutar (2001) and Roig et al. (2006) (table 3.14).

Table 3.14. Conceptualization and operational definition, survey items and scales used for social value

Construct	Conceptual Definition	Operational Definition	Survey items	Scales
Social Value	"perceived utility acquired from an alternative's association with one or more specific social groups''(Sheth, Newman & Gross al. 1991b, p.161)	Measured by the extent of agreement with statements in a Likert scale about the general perception about social value	1. I seek the approval of my smartphone by either my family, friends, or co-workers/peers	Interval
			2. I seek the acceptance of my smartphone by either my family, friends, or co-workers /peers.	
			3. I seek to use my smartphone to improve the way I am perceived by either my family, friends, or co-workers/ peers.	
			4. I seek to impress either my family, friends, or co-workers/ peers through the purchase of my desired smartphone.	
			5. I seek to buy a smartphone that either my family, friends, or co-workers/ peers select/s.	
			6. I seek to buy a smartphone that can be an expression of myself. (Sweeney and Soutar 2001; Roig et al. 2006)	

As the value gained from a product's capacity to arouse feeling (Sheth, Newman & Gross 1991b), emotional value is an important determinant of perceived value (Sweeney & Soutar 2001). It is measured via six Likert type scale items adapted from Sweeney and Soutar 2001 and Bloch, Brunel & Arnold (2003) (table 3.15).

Table 3.15. Conceptualization and operational definition, survey items and scales used for emotional value

Construct	Conceptual Definition	Operational Definition	Survey items	Scales
Emotional Value	"The perceived utility acquired from an alternative's capacity to arouse feelings or affective states" (Sheth, Newman & Gross 1991b, p.161)	Measured by the extent of agreement with statements in a Likert scale about the general perception about social value	1. I feel excited when I have my desired smartphone.	Interval
			2. I feel relaxed while using my desired smartphone.	
			3. I feel good that my smartphone is superior to other smartphones.	
			4. I am happy when I am using my desired Smartphone.	
			5. I feel my life is better since I bought my smartphone.	
			6. Being noticed by others while using my desired smartphone is important to me.	
			(Sweeney & Soutar 2001; Bloch, Brunel & Arnold (2003)	

Describing all the items used to measure aesthetics and perceived value dimensions, the items of purchase intention are depicted in the next step. To measure purchase intention as the likelihood of consumers purchasing a product, I use four Likert-type measurement items used by Chandran and Morwitz (2005) (table 3.16).

Table 3.16. Conceptualization and operational definition, survey items and scales used for purchase intention

Construct	Conceptual Definition	Operational Definition	Survey items	Scales
Purchase Intention	The likelihood of consumer purchasing a product or behaving in a certain way	Measured by the extent of agreement with statements in a Likert scale about the general perception about social value	1. It is probable that I will purchase my ideal smartphone if it is in the market 2. It is certain that I will purchase my ideal smartphone if it is in the market 3. There is chance that I will buy my ideal smartphone if it is in the market 4. I am likely that I will buy my ideal smartphone if it is in the market (Chandran & Morwitz 2005)	Interval

3.6. Nature of constructs

This research is made up of both reflective and formative measures. Previous works in the area have established components of perceived value and purchase intention as being part of the reflective measurement category (Sweeney & Soutar 2001; William & Soutar 2009). Regarding aesthetics, only Swilley (2012) made a framework for aesthetic evaluation and viewed it as a reflective measurement. To distinguish reflective constructs from formative, Jarvis, MacKenzie, & Podsakoff (2003) use four criteria:

1. Will the dropping of an indicator in the framework change the meaning of the construct? Since the causality is always from construct to indicators, dropping an item from reflective variables does not change the meaning of that variable.

2. The measures are expected to correlate and be interchangeable. The variables need not be exchangeable for formative measurement models but should be for reflective measurement models.

3. Will the indicators covary with each other? Although covariation among the indicators is not necessary or implied by formative indicator models, covariation among the indicators is a prerequisite for a reflective indicator framework.

4. Will all of the measures required have the same antecedents and consequences? For the reflective indicator model, since all of the indicators reflect the same underlying construct and are assumed interchangeable, they should all have the same antecedents and consequences. For the formative indicator model, since the measures do not necessarily represent the same aspects of the construct's domain, they are not necessarily interchangeable and there is no need to have the same antecedents and consequences.

3.6.1. The nature of aesthetics

Swilley (2012) conceptualised aesthetics in a reflective manner, which is problematic for two reasons. First, indicators in reflective models should be interchangeable (Jarvis, MacKenzie & Podsakoff 2003), but shape, touch, colour and design as components of aesthetics are unique and not interchangeable. Aesthetics is a formative variable because:

1. Each sub-construct such as shape, colour, or touch is a part and attribute of the aesthetics appreciation of an object and deleting any of them may change the definition of aesthetics. Aesthetic appreciation is made by viewing the design, shape, colour and beauty of the product. The causality is from these constructs to aesthetics.

2. There is no theoretical argument that indicators of shape or colour should correlate to each other. Variables such as design or texture/touch are not interchangeable and convey different meaning in the mind of appreciators. Therefore, a formative approach to aesthetic appreciation is used.

3. There is no theoretical framework supporting the covariation among different measures of aesthetics. All of these constructs are clearly unique, distinguishable and not interchangeable.

4. Since the first-order constructs of aesthetics are not interchangeable and indicators of each construct measure only that construct, constructs cannot have the same antecedents and no theoretical reason establishes that all must do so.

Thus, aesthetics as second-order factor is made of its constructs. Colour, shape and touch do not correlate to each other (figure 3.3). However, all the first order constructs of aesthetics, such as design and colour, are reflective (Swilley 2012). Since the causality is from these variables to their items, by deleting an item, the meaning of the variables does not change. The items are correlated and interchangeable and measure their constructs.

As shown in figure 3.4, the first order components are reflective. Therefore, the causality is from the construct to the measures. Specifically, the latent variable (each dimension of aesthetics) η represents the common cause shared by all items Y_i reflecting the construct, with each item (Y) correlating to a linear function of its underlying construct (η) plus measurement error (formula 3.1; Diamantopoulos, Riefler & Roth 2008):

$$Y_i = \Sigma \lambda_i \eta_j + e_i \qquad \text{(formula 3.1)}$$

Where e_i is the measurement error for the ith indicator and λ_i is a loading capturing the effect of η on Y_i. Measurement errors are supposed to be independent (cov (e_i, e_j) =0, for i≠ j) and unrelated to the latent variable (cov (η, εi) =0, for all i).

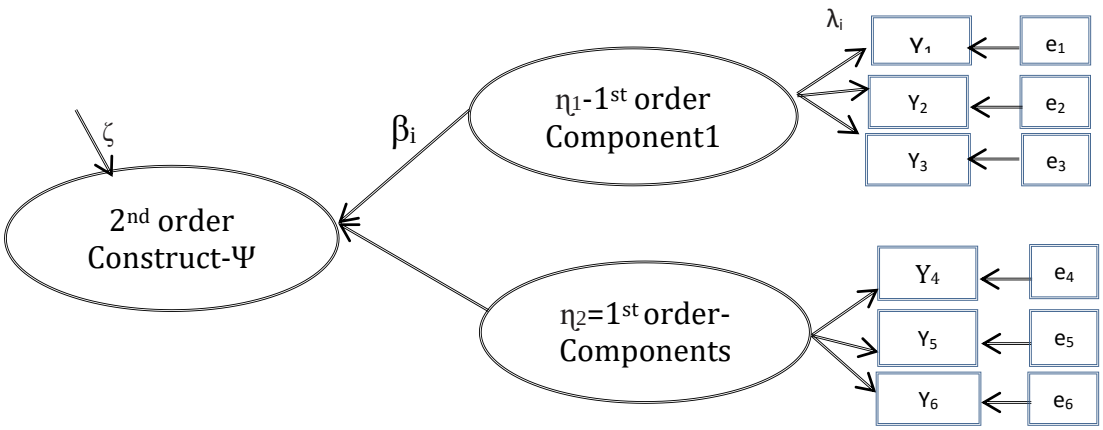

Figure 3.3. Second order factor

For aesthetics as a second order formative construct, measures such as shape or colour are determinants of it. To measure aesthetics, formula 3.2 is used (formula 3.2; Diamantopoulos, Riefler & Roth 2008):

$$\Psi=\Sigma\eta_j\beta_j+\zeta \quad \text{(formula 3.2)}$$

Where β_j is a loading capturing the effect of dimensions of aesthetics construct (ηj) on the latent variable (Ψ) and ζ is a disturbance term. The latter includes all remaining causes of the construct which are not represented in the first order construct and are not correlated to the latter (cov (η_j, ζ) =0)

3.6.2. The nature of perceived value dimensions and purchase intention

Dimensions of perceived value (functional, social and emotional) are always treated as reflective in all previous research (e.g., Ruiz et al. 2008; Pura 2005; Sweeney & Soutar 2001). Causality always proceeds from constructs to indicators and items in each construct are interchangeable (e.g., Wang et al. 2004; Pura 2005).

3.6.3. Measurement Scales

Except for two items suggested by the focus group and pilot study, all the others used to measure the latent constructs in this research were used in prior studies, as mentioned in the literature review. To measure respondents' attitudes, two options are available: The Likert scale (Likert 1932) and the semantic differential

scale (Osgood 1964). In the semantic differential scale, respondents rate a product, brand, or company based upon a seven-point rating scale that has two bi-polar adjectives at each end (Friborg, Martinussen & Rosenvinge 2006). Thus, it is more appropriate for comparing two objects. The Likert scale is suitable for our study and preferred by our pilot survey respondents because it is hard to rate their feelings regarding the beauty of a product (Friborg, Martinussen & Rosenvinge 2006).

This thesis uses the 5-point Likert scale for all items in the questionnaire since there is not much difference in mean, standard variation, skewness or kurtosis in results made by rescaling (Dawes 2002; 2008). The seven- and nine-point scales for my questionnaire with more than sixty items could be too long and even confusing.

3.6.3.1. Measures of an exogenous variable

This section identifies the nature of the constructs as well as the exogenous and endogenous variables used in the study. It also compares the use of scales to measure the variables and justifies the use of the selected item.

Measures of the dimensions of aesthetics: Aesthetics is made of five factors: colour, design, beauty, texture/touch and shape. Their items were mostly adapted from Swilley's study in order to understand whether they can be factors of aesthetics. These scales were chosen because they were used in the same area (electronic products) and found to have high-level alpha scores reported (table 3.17).

Table 3.17. Previous study using scales for aesthetics

Author/Year	Construct	Number of items	Reliability	
			For PC	e-reader
Swilley 2012	Colour	6	.9	.89
	Design	4	.87	.86
	Beauty	2	.91	.89
	Texture/Touch	3	.94	.91
	Shape	3	.92	.92

3.6.3.2. Measures of endogenous variables

This study has five endogenous variables: aesthetics, functional value, social value, emotional value and purchase intention. Aesthetics as a formative variable does not have any item to be evaluated directly and is measured via its variables (2nd order factors) which are described subsequently.

Measures of functional value (FV): An eight-item scale is used to construct "functional value." The eight items were extracted from the focus group, pilot study and different studies, as we try to use items that can measure functional value perceived from a smartphone (table 3.18).

Table 3.18. Measures of functional value

No	Items	Reference
1	I want a smartphone with a layout, which is easy to follow.	Sweeny &Soutar 2001
2	I want a smartphone with the highest reliability.	Yang & Jolly 2009; Callarisa Fiol et al.2011
3	I want a smartphone with the high degree of functionality.	Yang & Jolly 2009
4	I want a smartphone, which is easy to use.	Callarisa Fiol, Moliner Tena & García 2011
5	I want a smartphone, which is useful based on its technical capabilities like a powerful processor or running different programs at the same time.	Ben-Bassat, Meyer & Tractinsky 2006
6	I want a smartphone, which is durable in terms of damage protection or battery life.	Sweeney & Soutar 2001
7	I want a smartphone with many different software applications for different purposes.	Yang & Jolly 2009
8	I want a smartphone that is versatile like being good on texting and calling	Added from pilot study

The first and sixth items "I want a smartphone with a layout which is easy to follow" and "I want a smartphone which is durable in terms of damage protection or battery life" were adapted from a six item scale which had a Cronbach's Alpha of .82 used by Sweeney and Soutar (2001) (Table 3.19).

Table 3.19. Previous studies using scales for functional value

Author/Year	Number of Items	Reliability	Scale	Context
Yang & Jolly 2009	6	.88	Seven-point Likert scale	Mobile data
Sweeney & Soutar 2001	6	.82	Seven-point Likert scale	Durable goods
Callarisa Fiol, Moliner Tena & García 2011	3	.75	Seven-point Likert scale	Industrial Cluster
Ben Bassat, Meyer & Tractinsky 2006	3	.87	Seven-point Likert scale	Software design

The second, third, fourth and seventh items were adapted from a seven-point Likert scale used by Yang and Jolly (2009) and Callarisa Fiol, Moliner Tena and García (2011) and modified to be applicable in our context (Table 3.20). Yang and Jolly used six and Callarisa Fiol three items to measure functional value. I used items from these sources because of their high internal consistency and reliability. The eighth item "I want a smartphone that is versatile like being good on texting and calling" was suggested and verified in the pilot study.

Measures of social value (SV): Social value appeared as a construct of perceived value in a framework proposed by Sheth, Newman & Gross (1991b). For this study, Sweeney and Soutar's (2001) items are used in order to measure social value (table 3.20) because they were used in the same context (durable goods) and a range of studies have used it (Walsh, Shiu & Hassan 2014).

Table 3.20. Measures of social value

Number	Items	Reference
1	I seek the approval of my smartphone by either my family, friends or co-workers/peers	Sweeney & Soutar 2001
2	I seek the acceptance of my smartphone by either my family, friends or co-workers/peers	
3	I seek to use my smartphone to improve the way I am perceived by either my family, friends or co-workers/peers	
4	I seek to impress either my family, friends or co-workers/peers through the purchase of my desired smartphone	
5	I seek to buy a smartphone that either my family, friends or co-workers/peers select/s	Roig et al. 2006
6	I seek to buy a smartphone that can be an expression of myself among my family, friends, or co-workers/peers	Roig et al. 2006

The scale also has reported high reliability (0.9) (Table 3.21). These researchers used five-item scales and had high Cronbach's Alpha.

Table 3.21. Previous studies using scales for social value

Author/Year	Number of Items	Reliability	Scale	Context
Sweeney & Soutar 2001	4	.94	Seven point Likert scale	Durable goods
Roig et al. 2006	4	.827	Five point Likert scale	Bank Marketing

Emotional Value: Emotional value is also used as a construct of perceived value in the framework proposed by Sheth, Newman & Gross (1991b). In this study, three items extracted from Sweeny and Soutar's (2001) seven point Likert scale study are applied (Table 3.22). The 'perceived emotional value' (EV) is well recognized in perceived value theory, with a range of studies employing it (Walsh, Shiu & Hassan 2014). In addition, two items from Bloch, Brunel & Arnold (2003) five-point Likert study, which were more related to the research, were added (Table 3.22).

Table 3.22. Measures of emotional value

Number	Items	Reference
1	I feel excited when I have my desired smartphone.	Sweeney & Soutar 2001
2	I feel relaxed while using my desired smartphone.	Sweeney & Soutar 2001
3	I feel good that my smartphone is superior to other smartphones.	Bloch, Brunel & Arnold 2003
4	I am happy when I am using my desired smartphone	Sweeney & Soutar 2001
5	I feel my life is better since I bought my smartphone	Bloch, Brunel & Arnold 2003
6	Being noticed by others while using my desired smartphone is important to me.	Added from focus group

All items had high Cronbach's Alpha (table 3.23), showing all items measure the same construct. One item suggested by the focus group and confirmed by the pilot study was also added as a measure of perceived emotional value.

Table 3.23. Previous studies using scales for emotional value

Author/Year	Number of Items	Reliability	Scale	Context
Sweeney & Soutar (2001)	5	.94	Seven point Likert scale	Durable goods
Bloch, Brunel & Arnold (2003)	3	.89	Five point Likert scale	Visual Product aesthetics

Purchase intention: To measure the probability of buying a product, purchase intention was justified (Chapter 2). In different contexts, researchers used different items to measure purchase intention. For example, Chandran and Morwitz (2005) used a seven- point semantic scale (table 3.24) because of its high reliability (table 3.25).

Table 3.24. Measures of purchase intention

Number	Items	Reference
1	It is probable that I will purchase my ideal smartphone if it is in the market	Chandran & Morwitz 2005
2	It is certain that I will purchase my ideal smartphone if it is in the market	Chandran & Morwitz 2005
3	There is a chance that I will buy my ideal smartphone if it is in the market	Chandran & Morwitz 2005
4	It is likely that I will buy my ideal smartphone if it is in the market	Chandran & Morwitz 2005

To assess whether respondents intended to purchase a smartphone, I adapted four items from Chandran and Morwitz's (2005) study.

Table 3.25. Previous study using scales for purchase intention

Author/Year	Number of Items	Reliability	Scale	Context
Chandran & Morwitz 2005	4	.89	Seven-point semantic scale	Consumer behaviour: consumer ‘s cognitions and actions

3.7. Survey Method

This section of the quantitative stage of the research project discusses and justifies the data collection method used for the main study. The pilot results helped to improve the questionnaire and modify the survey implementation method for the second part of the quantitative research stage. Although the four basic survey methods focus on personal interviews, telephone interviews, mail survey and fax surveys (Aaker et al. 2010), scholars are paying more attention to the use of the internet in data collection (Malhotra, Birks & Wills 2012).

3.7.1. Justification for using the survey methodology

I used the survey method to collect data for this research because it can be administered to a large sample size in geographically dispersed locations at relatively low cost (Malhotra 2010). Although the recommended method for conducting causal research is an experimental design, its lack of external validity is always a major concern for researchers (Zikmund 2003) and problematic in social research (de Vaus 2002). For example, the findings from an experiment cannot be generalized to all individuals who do not have the characteristics of the participants or to past or future situations because they are time-bound (Creswell 2012). It is not only difficult to acquire repeated measures for the same large group of respondents (above 200) at different times, but also difficult to obtain a control group. Consequently, experimental intervention was excluded.

3.7.2. Data collection method

The final data collection for this study was undertaken by using an online survey panel. The panel members were recruited through a research agency. Ham (1999) flagged ethical concerns in using a third party for data collection. However, Grundvåg Ottesen, Grønhaug and Johnsen (2002) suggest that cooperation should occur between the researcher and research agency for the effective handling of problems and challenges that typically emerge during a project. Although commissioned research is costly, its production is timely and highly reliable.

3.7.3. Rationale for using a web-based survey

With the advent of the internet, web-based surveys provide easy access to various groups of respondents (Evans & Mathur 2005). It provides easy access to respondents who used to be difficult to reach without being worried about getting past a 'gatekeeper'; "people who either intentionally or unintentionally, shield a selected respondent or informant from the researcher" (Sutton 1989, pp. 428).

Compared to a telephone survey, participants may take as much time as they need to answer all individual questions whenever they feel it is convenient (Evans & Mathur 2005). Using a web-based survey can reduce interviewer and researcher biases that are likely in face-to-face surveys (Fricker & Schonlau 2002). A web-based survey has the benefit of using different forms of questions including dichotomous, multiple-choice, scales, questions in a multimedia format, single response, multiple-response and open-ended text boxes (which were not required for this study). These types of questions make it easier for respondents to go through the questionnaire.

Respondents can be directed to answer particular questions related to their previous response which can reduce any confusion arising from complicated instructions (for example, "If you answer yes to question 2, then answer question 3; otherwise answer question 4") (Evans & Mathur 2005). Online surveys can be designed in a way that respondents must answer a question before going to the next question or even completing a survey, thus instructions are compulsorily followed. This reduces non-response items and the necessity to throw out answers that are not

entered properly, increasing the item completion rate compared to mail survey (Ilieva, Baron & Healey 2002).

Reducing the chances of a socially desirable response by providing complete respondent anonymity (Dwivedi et al. 2012) is the other advantage of online surveys that is not entirely possible in paper-based or telephone surveys (Zikmund 2003). A web-based survey was a feasible alternative for this study as the commissioned research agency (Pure Profile) provided the panel. It was responsible for ensuring the integrity of respondents and the quality of the results. Survey Monkey agency was also use as the medium for conveying the research instrument and allowing collection of responses.

3.7.3.1. Use of online panels

The online access panel survey (Looseveldt & Sonck 2008) is a popular type of web survey that is increasingly used in different research studies (Callegaro & Disogra 2008) to measure peoples' opinions. An online panel is a group of people who agree to take part in web surveys once or repeatedly (Göritz & Moser 2006). I used an online panel because of its short field times and likely high response rate (Evans & Mathur 2005). Online panels are not only cost effective and faster in data collection, but can provide high-quality data (Aaker et al.2010, p.176) as participants are likely to be willing, reflected in their self-selection to a consumer panel.

Although the potential for coverage bias is possible when using internet surveys, it is not a major drawback in Australia since internet usage is widespread, with 90% penetration and 81% of the population 18 years and above classified as active online users (Department of State and Regional Development 2009). Furthermore, ability to access panellists' historical and profile data in the online panel helps to target a specific segment of the potential panel whom I wish to fill out my survey (Göritz, Wolff & Goldstein 2008). In the context of this research, a leading academic online survey agency with access to large consumer panels that could be screened to suit a researcher's request was used. This agency permitted access to panellists' demographic information such as their age, gender, postcode, state, occupation, marital status, annual income, level of education and ethnic background.

3.7.3.2. Validity of online panels

Although it is important to measure the validity of online panel responses used for research purposes, systematic rules are lacking (Chakrapani 2007). Reviewing different guidelines scattered throughout the literature, I adapted Khan's (2012) four-stage panel management process:

1. Recruitment of panellist and sampling
2. Invitation, response rates and reminders
3. Panel monitoring and maintenance
4. Panel relations

1. Recruitment of panellist and sampling

An important element, which affects the quality of the sample, is the choice of recruitment method. Between 'opt-in' and 'opt-out' as two different methods of online panel recruitment, I chose the former in order to be sure of the panels' willingness to participate in my study (Malhotra, Agarwal & Peterson). Thus, an invitation should be sent to potential participants to see whether they positively respond to that invitation. This creates an extra step in survey recruitment that asks potential participants to give consent to be invited to participate in the survey (Hunt, Shlomo & Addington-Hall 2013).

In this method, potential respondents are directed towards the website where panel-related terms and conditions can be found. They are asked to fill in the registration form, which automatically leads to socio-demographic database (Khan 2012). The chosen research agency for this study, 'PureProfile', uses multiple sources for recruitment of their panels. Panels are recruited by email and online marketing from over 550,000 members. Using a non-random probability sampling procedure, the researcher can make a better analysis and interpretation of the intention of internet users (Schillewaert, Langerak & Duhumel 1998).

I used non-probability sampling for the opt-in approach, in order to access respondents over 18 years old all around Australia. There is no limitation to choose a

specific group of people in a specific area. An added advantage is that non-probability sampling is cost-effective and requires less time compared to random sampling (Malhotra, Birks & Wills 2012).

However, this research may be faced with the possibility of coverage error (Collier & Bienstock 2007). This happens when the sampling frame does not contain all the subjects in the population of interest (Collier & Bienstock 2007). Since 81% of the population 18 years and above in Australia are classified as active online users (Neerav 2012; Department of State and Regional Development 2009), the demographic gap between online respondents and the overall population is declining. In addition, in order to prevent the multiple registrations for the survey where respondents may sign up more than once, the IP-address can be tracked (Reips 2007). To double-check the questionnaire quality, I requested the email addresses of the respondents in addition to obtaining their IP-address. Thus, the issue of double-registration is handled automatically by the computing system.

2. Invitations, response rates and reminders

Choosing a sample from the recruited panellists and sending an invitation to participate in the research study is the second stage of the panel management process. I used the quota sampling technique at this stage in order to control the sample for specific characteristics (Malhotra, Birks & Wills 2012).

To ensure that all respondents had experience using smartphones, only those who had bought smartphones were included in the sample. Furthermore, to ensure an Australian market context, respondents were restricted to those who had lived in Australia for more than five years. The final 783 respondents were screened and included in the sample. As a quick and inexpensive way for inviting panellists (Gortiz 2007), email invitations to complete the web-based survey were sent by the research agency. Since the response rate was high - about 50% - in the first week of the online survey launch, no reminder email was sent (Brennan & Hoek 1995) to improve the response rate.

Another concern is about the response errors that may be made by both the interviewer and respondents (Malhotra, Birks & Wills 2012). Participant selection, questioning, recording and cheating errors are response errors potentially made by

interviewers. As they do not participate in online data collection, interviewers do not make errors in the data collection stage. However, respondents can make two types of response errors:

- An inability error happens when participants are unable to provide accurate answers because of topic unfamiliarity, fatigue, boredom, question format, or question content.

- Unwillingness errors occur when respondents are unwilling to provide accurate information for various motives, such as to impress the interviewer or to provide socially acceptable answers (Malhotra, Birks & Wills 2012).

Barnett (1998) suggests two main steps in order to enhance the quality of responses obtained and to reduce response errors:

(i) ***Guarantee of anonymity****:* This has been found to increase the response rate and strengthen the quality of responses (Barnett 1998). Questions regarding demographic and socioeconomic attributes such as age, gender and salary may raise a feeling of uneasiness among respondents. Thus, the confidentiality of information is important. All responses are known by each respondent's unique identification number. All responses are known by each respondent's unique identification number. The full names of participants remain hidden. Therefore, respondents are assured that their responses are not traced back to their identity.

(ii) ***Adjusting questionnaire format:*** In order to reduce the apparent threat from the questions, Lee (1993) proposed using techniques such as adding a preface to some questions (For example: While there are no right or wrong answers, your responses are important to this research and should reflect your own personal opinion. All information collected is confidential. We appreciate your cooperation in this regard).

3. Panel Monitoring and Maintenance

The third stage of the panel management process includes active management of the panel, such as monitoring individual participation, to ensure that each panellist complies with the European Society for Opinion and Marketing Research

(ESOMAR) standards, which is compulsory for any accredited panel provider. For my study, participation was monitored via a tiered, non-compliance system for tracking and communicating with panellist. Under this system, panellists are removed when their activity falls below a certain level within a twelve-month timeframe or if they complete their surveys too quickly.

The agency commissioned for this project has its own set of prescribed rules. For example, the panel manager and the researcher can monitor the activity of their panel members and identify the survey takers who leave surveys blank or without response or whose responses are based on a pattern. These respondents are removed.

Furthermore, the agency uses a range of in-house surveys with built in security and fraud checks, cross-referencing existing profile data with survey responses. Such activities actively identify and remove unreliable respondents from the panel. Demographic information of the respondents is also updated by encouraging panellists to regularly update their profile online. Regular contact from panellist helps to reduce panel attrition rates.

Panel attrition is not only about dealing with losing a panel member, but also with the problem of keeping a high number of operational panel accounts. Reasons such as lack of interest, lack of appreciation of the amount of work participated in, or a change in household conditions, death, invalid email address and members' doubts regarding the security of data (Göbrenna 2007) may make panel members inactive. Demographic attributes such as age, gender, education and race groups can influence attrition rates (Olson & Witt 2011). For example, people with higher education and income are less likely to withdraw (Watson & Wooden 2009). Attitudinal measures are also mentioned in the literature as predictors of panel attrition, including social (Waterton & Lievesley 1987) and political attitudes (Lepkowsky & Couper 2002).

In order to reduce the panel inefficiency and attrition rate, the research agency makes sure the panellists are not over-used since it helps to reduce the bias result and tedium from repetition (Nancarrow & Cartwright 2007). Furthermore, pure profile panellists are given incentives as a sign of respect and consideration for their time and effort and as a good tool to increase predisposition to participate and

reduce the number of incomplete replies (Heerwegh 2006). The incentive provided for this research project was $10 per respondent.

4. Panel relations; Respondents' Engagement

Panel relations and respondent engagement are the fourth and final stage in the panel management process used for this study. In this stage, the researcher has to make sure that panel members need to be seen as 'valued employees' who are recompensed for their "carefully considered responses" (Sparrow 2007, p. 182).To manage panel members, the commissioned agency has a 'respondent management' programme in order to guide the company's customer relationship marketing (CRM) (Shearer 2008). The agency recruits employees who receive compensation for responding to panellists' questions and this ensures a 'friendly atmosphere' (Hill 1969) in panel-based research.

It is predicted that a greater level of personalized communications with panel members will be helpful for the retention of panellists. This agency includes a respondent feedback questionnaire at the end of all surveys (unless specifically requested not to by the client) and maintains regular internal communication with account holders through customer feedback activities. The most reliable 'measure' of satisfaction is the ongoing participation of over 80,000 unique account holders per month in Australia and continued panel growth predominately through friend referrals – a reliable measure that account holders value their engagement (Pureprofile 2012). By clearly conveying the relevant instructions and the researcher's expectation, the research agency trains the respondents in a good practice (Schlackman 1984).

3.7.4. Sampling Strategy

The sampling stage provides the process in which the researcher determines which subjects to survey in order to obtain the relevant information. Following Malhotra, Birks &Wills (2012), six steps were followed for the sampling design process:

Step 1: Defining the target population

The target population has to be defined precisely in order to have an accurate sample representative of the population (Malhotra, Birks & Wills 2012). Imprecise definition of the target population leads to a research that is ineffective at best and misleading at worst (Malhotra & Birks 2006, p.406). In this study, the target population includes males or females aged older than 18. Since the research is Australian based, the population is individuals who are citizens of Australia and have a smartphone.

Step 2: Determine the sampling frame

The sampling frame includes all the characteristics of the target population. The sampling frame for this research study is the online panel made available by the commissioned research agency. It is a leading provider of online research services, hosting, scripting, reporting and sample provisioning, in 45 countries.

Step 3: Select a sampling technique

Selected panellists were invited by email to participate in the study by clicking on the link included in the email. As a result, the response rate of 54.6% achieved was considered satisfactory as the surveys with no prior contact with respondents have on average of less than 40% rate of response (Cook, Heath & Thompson 2000).

Step 4: Determine the sample size

The main quantitative study was based on a sample of 415 completed responses. The sample size of 415 is sufficient in PLS-SEM models because this is ten times the largest number of structural paths, which is four in this study, directed at a particular latent construct, aesthetics, in the structural model (Hair, Ringle & Sarstedt 2011).

Step 5: Execute the sampling process

To execute the sampling process, the researcher reviewed the operational definition of the individual as the sampling unit. Individuals were defined as respondents aged older than 18 and citizens of Australia who had previously owned a smartphone.

Step 6: Validate the sample

To ensure suitability, participants had to answer four questions at the beginning of the survey:

1. What is your age?

2. Have you ever had a smartphone?

3. Are you an Australian citizen?

4. How many years have you been living in Australia?

In this way, only participant who satisfied the criteria for the target population could participate in the survey.

3.7.5. Data Analysis Method

SPSS version 21 was used to analyse the preliminary data and Warp-PLS 4.0 to test the hypothesised model. The data are analysed using Structural Equation Modelling (SEM); a second-generation multivariate statistical technique made to estimate the parameters of a structural model (Hair et al. 2010).

3.7.6. Preliminary Data Analysis

To analyse the quantitative data resulting from the survey, I used SPSS version 21 software. The software was applied to identify outliers (i.e.; using box and whisker approach). The results will provide initial information about the measurement items used in the questionnaire as well as details about the sample population.

3.7.6.1. Structural Equation Modelling

Hair et al. (2010) suggest different methods to analyse the relationship between a set of variables including:

- Discriminant Analysis
- Path Analysis (PA)
- Factor Analysis (FA)
- Multiple Regression Analysis (MRA)
- Structural Equation Modelling (SEM)

For this research, I used the Structural Equation Modelling (SEM) technique. As a significant method of empirical research, SEM has been used in different research areas including psychology (McCallum & Austin 2000) and marketing (Babin, Hair & Boles 2008). Compared to first generation techniques, factor and discriminant analysis, which assess only single relationships, SEM as a second-generation technique appeared in the marketing literature in the early 1980s to evaluate whether there is any causal relationship among multiple independent and dependent constructs (Hair, Ringle & Sarstedt 2011). It also measures whether unobservable latent variables (LVs), which cannot be directly measured, are impacted by the correlation among manifest variables.

Observable and empirically measurable indicators known as manifest variables (MVs) are applied to measure LVs in a proposed framework (Hair et al. 2014). Indicators are classified into two groups: (1) reflective, which depend on the construct and (b) formative which causes the formation of, or a change in, an observable variable (Hair et al. 2014).

In sum, many researches have used the SEM approach to measure hypothesised frameworks. SEM is used to either explore or confirm theory. Exploratory modelling is used to develop a theory while confirmatory models test this theory.

3.7.6.2. Justification for using SEM

First generation techniques such as factor analysis (FA), multiple regression analysis (MRA) and path analysis (PA) are not feasible for this study. MRA only handles relationships between single dependent variables and many independent ones. In addition, both MRA and PA measure manifest or observable variables. Although FA can detect underlying latent variables from observed ones and measure constructs, it cannot measure the relationships among latent constructs (for example between aesthetics and purchase intention). SEM can measure latent variables at the observation level (outer or measurement model) and test relationships between latent constructs on the theoretical level (inner or structural model) (Bollen 1989).

3.7.6.3. SEM approaches

In order to measure the parameters of an SEM, covariance-based techniques (CB-SEM; Jöreskog 1978; 1993) and variance-based partial least squares (PLS-SEM; Wold 1982; 1985) are used. Although both methods share common roots (Jöreskog & Wold 1982), most marketing research has focused on CB-SEM (Hair et al. 2012). CB-SEM reduces the differences between the theoretical covariance matrix and the estimated covariance matrix (Hair, Sarstedt & Ringle 2012) by using Maximum likelihood (ML) or generalised maximum likelihood (GLS) estimation procedure (Hair et al. 2014) which requires normal distribution of observed indicators and sufficient sample size (Reinartz, Haenlein & Henseler 2009).

However, the variance-based approach maximize the variance of the dependent constructs explained by independent approaches (Haenlein & Kalan 2004) in an iterative sequence of ordinary Least Squares (OLS) regression (Hair et al. 2012) which requires no assumption regarding the distribution or measurement scale of observed indicators (Reinartz, Haenlein & Henseler 2009).

In addition, CB-SEM has been used to confirm (or reject) explored theories by finding out how well a proposed theoretical model can estimate the covariance matrix for the sample data set. However, PLS-SEM is primarily used to explore a theory by focusing on explaining the variance in the dependent variables when examining the model.

3.7.6.4. Justification for using PLS-SEM

I selected the PLS-SEM method for the following reasons:

1. The proposed model is made of variables from different frameworks and no study has tested this single model before. Furthermore, the study's goal here is exploring whether aesthetics can influence purchase intention directly or via components of perceived value. Consequently, the measurement model I needed to investigate is fairly new and needs to be developed.

2. The structural model is complex with a large number of latent variables and indicators. In this study, the hypothesised model is classified as a complex framework with ten latent variables, which are measured with more than 50 indicators.

3. The associations between indicators and latent variables are made in different modes.

In the proposed framework, all latent variables, except aesthetics as a second order factor, are reflective in that the latent constructs are proposed as the common cause of the items or indicator variables. For aesthetics as a formative measure, the first order constructs, such as shape and colour are assumed as the common cause of the aesthetics. Since formative variables involve an identification rule, the analysis of this type of construct using CB-SEM is relatively sophisticated. However, PLS-SEM permits the easy handling of a formative construct (Hair, Ringle & Sarstedt 2011).

4. PLS, called soft modelling, does not assume any form of distribution of measurement variables, which makes it suitable for analysis of non-normal or unknown distributional data (Reinartz, Haenlein & Henseler 2009) while for CB-SEM, the distribution should be normal. In this thesis, all the measurement items are perception based and measured on Likert scales. Therefore, since their distributions are unknown, their normality cannot be established.

Wold (1975) made partial least square under the name NIPALS (nonlinear iterative partial least square) and Lohmoller (1989) improved it (Hair et al. 2012). PLS was made as an alternative to CB-SEM that would focus on prediction while simultaneously adding many rules regarding the specification of relationships (Hair et al. 2012). I follow Hair, Ringle and Sarstedt's (2011, pp.144-145) rules of thumb for selecting PLS-SEM (table 3.26).

Table 3.26. Rules of thumb for selecting CB-SEM OR PLS-SEM

Criteria	CB-SEM	PLS-SEM
Research Goals	Theory testing and /or confirmation. Comparison of alternative theories	Predicting key target constructs, Exploratory/extension of an existing structural theory
Measurement model specification	When your constructs are all reflective	If formative constructs are elements of the model
Structural Model	If the model is non-recursive	If the structural model is complex (many constructs and many indicators)
Data Characteristics and Algorithms	If the data is normal	If your data is to some extent non-normal
Sample size	At least 200 (Urbach & Ahlemann 2010)	Can work with both small and large sample size

3.7.6.5. Path diagram

Hypothesised relationships between latent variables are given in the form of a path diagrams (figures 3.4 and 3.5) which show the visual presentation (path diagram) of the aesthetics and proposed measurement, subsequently. The path diagram in this research includes constructs, measurement variables, measurement errors and arrows to represent the relationship between the variables. Measurement variables for each latent variable are presented in rectangles (e.g., q9-1 or q12-2). For example, six measurement items (from q11-1 to q11-6) measure 'Social Value' (SV).The link shown between SV and its measurement items are similar to factor loadings in factor analysis. The single-headed arrows in the diagram illustrate the dependency of one latent factor to another. Measurement errors related to the composite variables are shown as (e), a disturbance term for aesthetics construct is shown as (z1) and residual errors for reflective factors linked to latent variables are represented as (z2-z5).

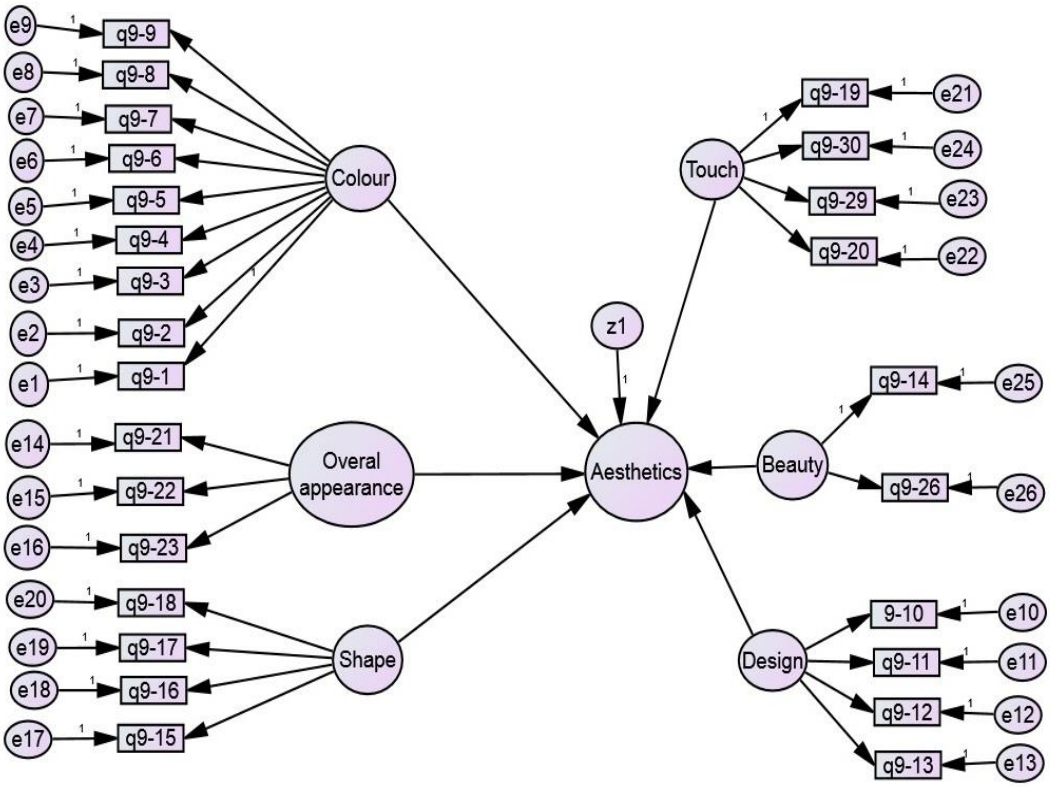

Figure 3.4. The detailed path diagram of the aesthetics as formative factor (the oval represents the latent variables and the rectangles illustrate the measured variables).

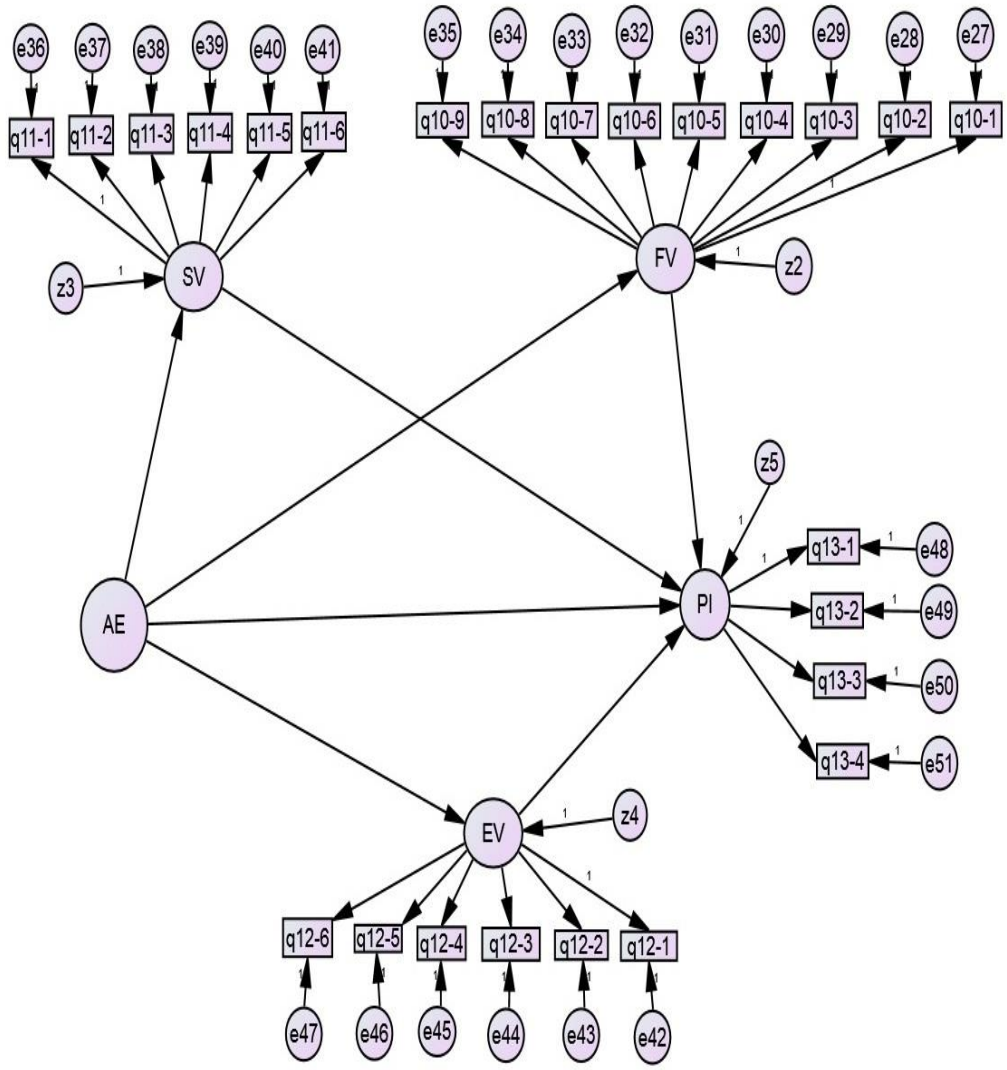

Figure 3.5. The detailed path diagram of the study (the oval represents the latent variables and the rectangles illustrate the measured variables)

3.8. Software used for analysis

This study used warp-PLS, which a nonlinear structural is modelling analysis software developed in 2009, to measure statistical relationships among measurement items and their constructs and among different latent constructs (Kock 2011).

In the study of both natural and behavioural phenomena, although most of the relationships among variables are nonlinear and are U-shaped and S-shaped, SEM tools such as LISREL and AMOS do not usually take non-linear relationships between LVs when calculating path coefficients, respective P-values or R^2

coefficients (Kock 2011). However, Warp-PLS as a PLS tool do consider non-linear relationships when performing statistical analysis (Kock 2011).

Thus, the empirical data are analysed to check the hypothesised model for analysing path coefficients, calculating p-values and model fit indices and multi-collinearity (Kock 2014; Kock & Lynn 2012).This study used warp-PLS, which is a nonlinear structural modelling analysis software developed in 2009, to explore statistical relationship among measurement items and their constructs and among different latent constructs (Kock 2011).

3.9. Model Validation

This stage assesses whether hypotheses are supported by the analyses of data (Urbach & Ahlemann 2010). Model validation is a process to assess "whether the measurement and structural model fulfil the quality criteria of the empirical study" (Mohamadali 2012, p. 108).

To measure partial model structures, Chin (1998) suggests some criteria. A systematic implementation of these criteria is a two-step process, including the (1) estimation of the outer model and (2) the estimation of the inner model (Henseler, Ringle & Sinkovics 2009- figure 3.6). Thus, at the beginning of the two-step process, model assessment focuses on the measurement models. A systematic evaluation of PLS estimates measures the measurement reliability and validity to the criteria that are linked to the formative and reflective outer model. In order to assess the inner path model estimates, the research should make sure that the measured latent variable scores show evidence of acceptable reliability and validity (Henseler, Ringle & Sinkovics 2009, p.298).

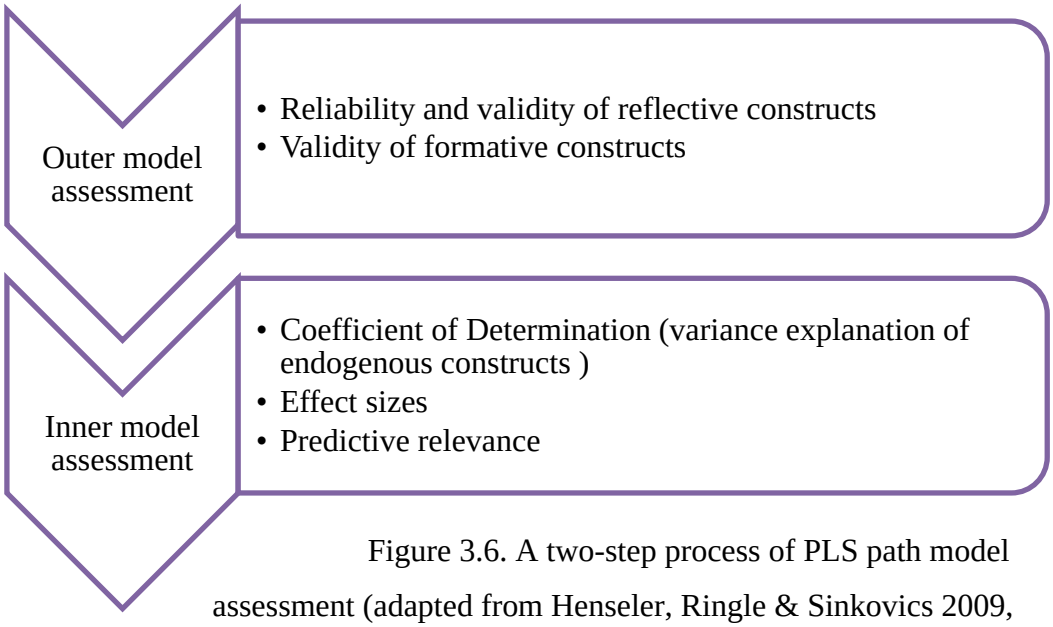

Figure 3.6. A two-step process of PLS path model assessment (adapted from Henseler, Ringle & Sinkovics 2009, p.298)

3.9.1. Outer model assessment: Assessing the reliability and validity

This stage first focuses on reliability and validity of the item measured. Reliability is tested in order to assess the consistency of results across items within a test (Hair et al. 2014). Validity should be assessed in order to find out how well indicators measure their constructs (Hensley 1999). Figure 3.7 and 3.8 (the path diagram), illustrate the first stage of the analysis (measurement model) for components of aesthetics, perceived value and purchase intention, which are specifying the causal link between manifest variables and their underlying latent variables. Ovals show the latent constructs and the rectangles shows the measurement items for each of the latent variable.

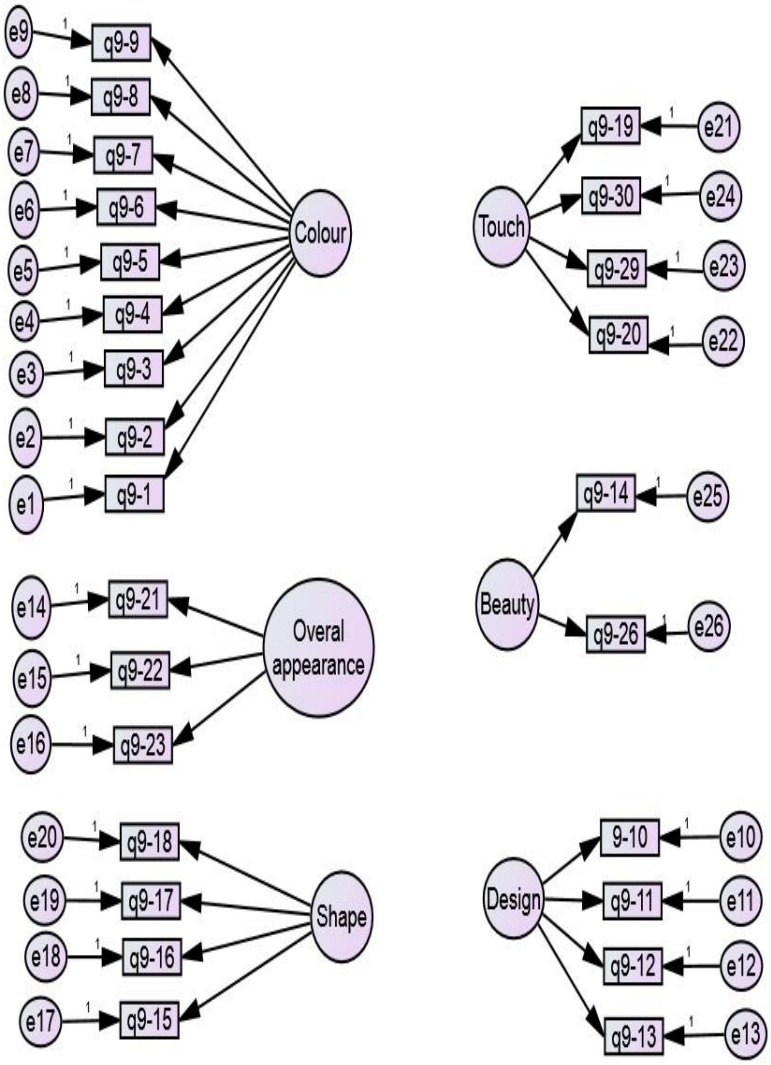

Figure 3.7. Measurements of aesthetics (the circles depict the latent constructs and rectangles show the measured variables).

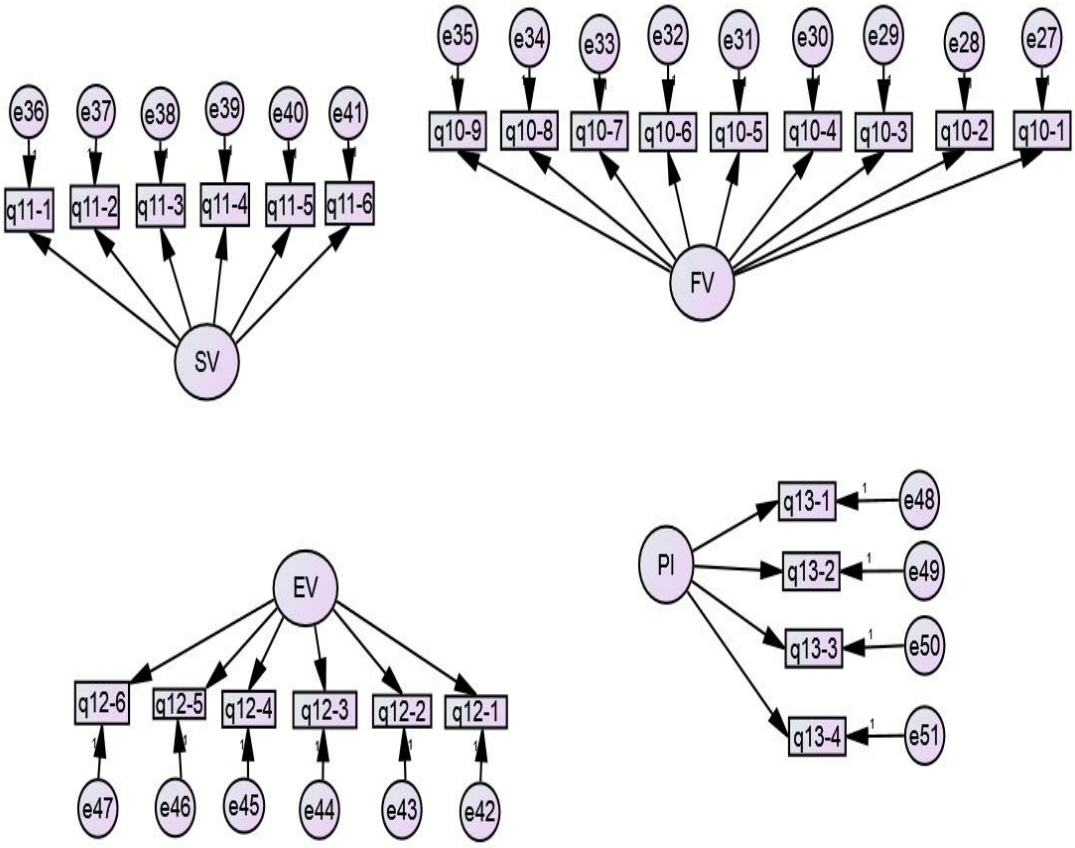

Figure 3.8. Measurement model (the circles depict the latent constructs and rectangles show the measured variables).

3.9.1.1. Reliability and validity of reflective constructs

Assessments of reflective outer models are made based on four criteria (Henseler et al. 2009; Hair et al. 2011):

1. Measuring indicator reliability (squared standardised outer loading),
2. Internal consistency reliability (Cronbach's Alpha and Composite Reliability),
3. Convergent validity (Average Variance Extracted, AVE),
4. Discriminant validity (Fornell-Larcker criterion, cross-loadings)

Assessing individual item reliability: Reliability refers to "the degree to which measures are free from random error and therefore yield consistent results" (Zikmund 2003, p. 330). That is, all respondents have the same interpretation of each

statement. Thus, reliability is achieved when a scale provides the same result every time a repeated measurement is made. Individual item reliability is measured by looking at the standardised loadings of the measurement items with respect to their latent construct. Hair, Ringle and Sarstedt (2011) suggest removing any loading with a value between 0.4 and 0.7 if deleting an indicator with a low loading will lead to an increase in Composite Reliability above the suggested threshold value. Since I adapted scales from different sources, I follow Hair, Ringle and Sarstedt's (2011) criterion, which uses 0.4 as a cut-off value.

In addition, Cronbach's Alpha (CA) is used to check for internal consistency and confirm the reliability of the composite items used for each latent variable. It measures the reliability based on the indicator intercorrelations (Henseler, Ringle & Sinkovics 2009). Although CA assumes that all indicators are equally reliable, PLS prioritizes indicators which leads to a more reliable composite (Henseler, Ringle & Sinkovics 2009). Cronbach's Alpha may tend to come up with an underestimation of the internal consistency reliability of latent variables in PLS path models (Werts, Linn & Jöreskog 1974). Therefore, to confirm the result made by CA, Composite Reliability (CR), as another measure of reliability, is used. Its result is interpreted in the same way as Cronbach's Alpha (CA). Thus, it is not a concern what internal consistency reliability is used as long as the consistency reliability value is above 0.7 (Nunnally & Bernstein 1994).

Assessment of the validity of reflective constructs: For the assessment of validity, two validity measures are assessed: the convergent validity and the discriminant validity (Hair et al. 2012).

Convergent validity tests whether a group of indicators represents the same underlying construct (Henseler, Ringle & Sinkovics 2009). Fornell and Larcker (1981) proposed using the Average Variance Extracted (AVE) to examine convergent validity. An AVE value of 0.5 and higher indicates an acceptable degree of convergent validity, meaning that a latent construct explains more than fifty percent of its indicator's variance (Hair, Ringle & Sarstedt 2011).

A measurement instrument has a good discriminant validity when a group of indicators measure the same underlying construct, which is shown through their

"unidimensionality" (Hair, Ringle & Sarstedt 2011, p.299). Therefore, the relationship between measures from different constructs should be very low. In PLS path modelling, two measures are usually used to evaluate discriminant validity: Fornell and Larcker's criterion and the cross-loading (Henseler, Ringle & Sinkovics 2009; Hair, Ringle & Sarstedt 2011).

The Fornell-Larcker measures whether "a latent construct shares more variance with its assigned indicators than with another latent variable in the structural model" (Hair, Ringle & Sarstedt 2011, p.146). Thus, if the AVE of each latent variable is "greater than the latent construct's highest squared correlation with any other latent construct," the researcher can accept the discriminant validity of the measurement model (Hair, Ringle & Sarstedt 2011, p.146). The second criterion, cross loading, "measures an indicator's loading with its associated latent construct and checks whether it is higher than its loading with all the remaining constructs" (i.e. cross loading) (Hair, Ringle & Sarstedt 2011, p.146). Warp-PLS 4.0 calculates the value of loading, Cronbach's Alpha, Composite Reliability and AVE of the measurement model simultaneously (Kock 2011).

3.9.1.2. Validity of formative constructs-aesthetics

For a formative construct, since the indicators represent the latent constructs' independent causes, they do not need to correlate highly (Hair, Ringle & Sarstedt 2011). Furthermore, formative indicators are assumed error-free (Edwards & Bagozzi 2000). Thus, the concepts of internal consistency reliability and convergent validity are not relevant for a formative variable (Diamantopoulos 2006, p.11). There are two assessments of validity of formative measurement. A first evaluation uses theoretic rationale and expert opinion (Rossiter 2002). A second judgment includes statistical analysis on two levels: at the indicator level and construct level (Henseler, Ringle & Sinkovics 2009).

At the construct level, a formative measure is assessed by measuring discriminant validity (Urbach & Ahlemann 2010). At the indicator level, a formative construct is measured via its indicator's weight and variance inflation factor. The indicator's weight should be at least .05 as significant level.

The variance inflation factor (VIF) is used to compute the degree of multicollinearity among formative constructs that are supposed to affect another LV (Henseler, Ringle & Sinkovics 2009). A rule of thumb states that VIFs greater than 5 reveal a critical level of collinearity (Henseler, Ringle & Sinkovics 2009).

In summary, both validity and reliability of the constructs are confirmed before testing the underlying hypotheses. Therefore, individual item reliability, convergent validity and discriminant validity of the variables are assessed in the first stage. Once the required conditions are met, the inner assessment phase starts. Table 3.27 summarizes all the criteria used to measure the outer model.

Table 3.27. Assessing outer model

Criterion	Description	Reference
Individual item reliability	Loading = 0.7 used as cut-off value	Hair, Ringle & Sarstedt 2011
Internal consistency	Cronbach's Alpha higher than .7 Composite Reliability higher than 0.7	Henseler, Ringle & Sinkovics 2009
Assessment of the convergent validity	AVE value of 0.5 and higher shows an acceptable level of convergent validity.	Hair, Ringle & Sarstedt 2011
Assessment of the discriminant validity	The AVE of each manifest variable has to be higher than the construct's highest squared correlation with any other latent construct	Fornell & Larcker 1981
	An indicator's loading should be higher than its cross loading	Hair, Ringle & Sarstedt 2011
Validity of formative constructs-aesthetics	The Indicators' weights should be at .05 significant levels. VIFs less than 5 reveal no collinearity.	Hair, Ringle & Sarstedt 2011

3.9.2. Inner model assessment

Having measured the reliability and validity of the outer model, I can analyse the proposed structural model. As mentioned before, the focus of the analysis is on the variance explained and the significance of all path estimates in the structural model. Its aim is to explore which latent variables influence the values of the latent constructs directly or indirectly (Hair et al. 2014).The structural model in PLS-SEM is measured by evaluating the explanatory power of the structural model and path coefficient. Several criteria are used to assess the suitability of the proposed theoretical model to be used to measure the impact of aesthetics on purchase intention (Table 3.28).

Table 3.28. Assessing the structural model

Criterion	Description	Reference
Coefficient of determinant, R^2	R^2 value of .67 as substantial, 0.33 as moderate, or .19 as weak	(Chin 1998, p.323)
Estimates for path coefficients	Path coefficient between LVs should be measured in terms of signs, magnitude and significance. In applications, the path coefficient with a p-value of .05 or less is significant.	(Hair et al. 2014)
Effect size f^2	Values of .02, .15 and .35 indicate an exogenous construct's small, medium, or large effect, respectively, on an endogenous construct.	(Hair et al. 2014); (Henseler, Ringle & Sinkovics 2009)
Prediction relevance (Q^2)	$Q^2 > 0$ confirms the models predictive relevance in respect of a particular latent variable and that observed values are well constructed.	(Henseler, Ringle & Sinkovics 2009)

3.9.2.1. Variance explanation of endogenous constructs, R^2 (Coefficient of Determination)

As first criterion for assessment of the PLS-SEM, the coefficient of determination (R^2) measures the amount of variation of each endogenous construct accounted by the exogenous variable/s (Hair et al. 2014). Chin (2010) suggests values of around .67 as substantial, 0.33 as average and values of 0.19 and lower as weak (table 3.28).

3.9.2.2. Effect sizes, f^2

Effect size measures whether an independent latent construct has an impact on a dependent LV (Cohen 1992). It helps to analyse the relevance of constructs in explaining chosen endogenous latent constructs (purchase intention). More specifically, it illustrates "how much a predictor construct contributes to the R^2 value of a target construct in the structural model" (Hair et al 2014, p. 198).

The rule of thumb for assessing f^2 is that values of effect size between 0.02 and 0.150, between 0.150 and 0.350 and exceeding 0.350, respectively, represent small, medium and large effects of the exogenous latent variable (Chin 2010; Gefen, Straub & Boudreau 2000; Cohen 1992).

3.9.2.3. Predictive relevance test, Q^2

Predictive relevance is used to "assess the predictive relevance of the endogenous constructs" (Barroso, Carrión & Roldan 2010, p.434). It can be measured via the nonparametric Stone-Geisser test (Geisser 1975; Stone 1974), which can be measured using blindfolding procedures (Tenenhaus et al. 2005). It presumes that the model must be able to predict each endogenous latent construct's indicators (Hair, Ringle & Sarstedt 2011). It indicates how well the model reconstructs observed values and its parameter estimates (Hair et al. 2014). As Chin (1998, p.320) mentioned: "(T) he prediction of observables or potential observables is of much greater relevance than the estimator of what are often artificial construct-parameter". The blindfolding procedure is only applied to endogenous latent variables that are reflective (Henseler, Ringle & Sinkovics 2009). $Q^2 > 0$ assumes

that the observed values are well reconstructed and the model has predictive relevance, while $Q^2 < 0$ gives evidence that the model lacks predictive relevance.

3.9.2.4. Path Coefficient

The path coefficient of latent variables shows the strength of the association between two latent constructs. In this study, the path coefficient between aesthetics (AE) and purchase intention (PI), functional value (FV), social value (SV) and emotional value (EV) are assessed to explore the strength of the proposed relationships in the framework.

As mentioned in section 3.7.6.4, PLS does not assume that data are normally distributed. Thus, information regarding the variability of the parameter estimates, as well as its significance, is created by using resampling techniques. The best-known sampling techniques usually used are the bootstrap and jack-knife (Fan & Wang 1996). They are used when no theoretical sampling distribution exist. For example, in exploratory or confirmatory factor analysis, no theoretical sampling distribution exists for factor pattern coefficients (Fan & Wang 1996). Using a method called "resampling with replacement," bootstrapping is a resampling algorithm that creates a number of resamples (number is defined by users). Each resample includes a random arrangement of the rows of the original dataset, where some rows may be repeated.

Alternatively, jack-knifing produces the same number of resamples as the original one and each resample has one row removed. That is, each resample has one case less than the original sample. Thus, the number of resamples has no effect on jack-knifing while it is important for bootstrapping (Nick 2011).

However, Fan and Wang (1996) found out, via simulations, that the bootstrapping technique provides less biased and more consistent results than the jack-knife method does. Therefore, sampling with replacement in a bootstrap technique sounds more precise than sampling without replacement in terms of simulating chance in using the jack-knife method (Fan and Wang 1996). Further, in jack-knife, the sub-sample is smaller than that in the original sample, but in bootstrapping every resample has at least the same number of cases or observations

as the original sample (Fan & Wang 1996). In addition, the estimated standard error found from the jack-knife approach shows more variation than the bootstrap approach (Efron & Gong 1983). Thus, another advantage of using bootstrapping is its ability to model the impacts of the actual sample size and stability in the results (Fan & Wang 1996).

In this research, the bootstrapping technique was used to estimate the p-values. It eases the problem of normal distribution as a prerequisite for estimating association among different variables (Preacher & Hayes 2008). Bootstrapping makes no assumptions about normality of data, which is suitable for the PLS-SEM method (Hair et al. 2014). If this indirect relationship is significant, the mediator may absorb some of the effect, or the entire effect, of aesthetics on purchase intention.

To understand the impact of mediators on the path between aesthetics on purchase intention, the variance accounted (VAF) was used to measure the size of indirect effect in relation to the total effect (i.e., direct effect + indirect effect; Hair et al. (2014). As shown in Formula 3.3 (Hair et al. 2014), P_{12}. P_{23} is the path coefficient of the indirect relationship between aesthetics and purchase intention when the dimensions of perceived value are used as mediators and P_{13} is the path coefficient of the direct relationship between aesthetics and purchase intention (figure 3.8).

$$VAF = (P_{12}.\ P_{23}) / (P_{12}.P_{23} + P_{13}) \text{ (formula 3.3)}$$

If the indirect effect is significant but does not absorb AE's effect on PI, the VAF will be low (VAF less than 20%) and one can conclude that no mediation is made. In contrast, a VAF above 80% means that full mediation takes place (Table 3.29). A VAF between 20% and 80% can be categorized as partial mediation (Hair et al 2014, p.225).

Table 3.29. Assessing the variance accounted for (VAF)

Measurement	**>80%**	**20% ≤ VAF ≥ 80%**	**VAF**
VAF	Full mediation	Partial mediation	No mediation

(Adapted from Hair et al. 2014)

3.9.3. Pre-data analysis

This section reviews steps taken to prepare data for analysis. It has three sections as summarized in figure 3.9.

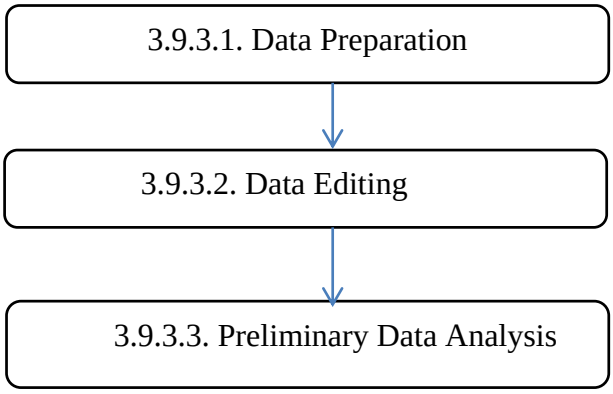

Figure 3.9. Overview of the pre-data analysis section

The section begins with an overview of the procedures undertaken for data preparation (section 3.9.3.1). Section 3.9.3.2 presents the preparation of data which includes data editing, coding and screening before conducting the PLS analysis. Section 3.9.3.3 presents the preliminary analysis of the data. A descriptive analysis of the sample is undertaken by developing a respondent's profile, response rate and characteristics. The next section presents the response rate and demographic profiles of respondents.

3.9.3.1. Data Editing and Coding

The first step in data analysis is editing the raw data. Its purpose is to clarify whether the data are “accurate, consistent with the intent of the question and other information in the survey, uniformly entered, complete and arranged to simplify coding and tabulation” (Cooper & Schindler 2014, p.376). Thus, it is a critical step in finding errors. In this dissertation, all the responses for the internet survey (including drop-off approach) were initially saved on the Survey Monkey server (these responses are available upon request). To ensure that responses are used solely for the purpose of this thesis as part of ethical consideration explained in section 3.10, when a sufficient number of responses were achieved (sample size of at least

400 as described in the research methodology chapter), the data were later downloaded and deleted from the provider's server.

The coding process involved assigning numbers or other symbols to answers in order to group responses into a limited number of categories (Cooper and Schindler 2014). Here, the coding is used to assign variable names to each measurement statement in the questionnaire. Each question represents a measurement item for its representative LV. The coding process can be undertaken before (pre-coding) and after (post-coding) the questionnaire is answered. Since pre-coding is suitable for manual data entry like mail or intercepted self-administered surveys (Cooper & Schindler 2014), post coding will be used as the coding procedure. The new .xls Excel file was created with each measurement item's name instead of question numbers such as q9.3, q9.4, or A1.

Appendix 4 illustrates the question numbers and its associated measurement items. As the next step, adjustment was made to the data set following Aaker et al. (2010). In the current study, some of the items (three items for aesthetics) in the construct scale contained reverse-coded statements. Therefore, it was necessary to perform 'scale transformation' for these items so that they could be easily analysed and compared with the other items.

3.9.3.2. Data Screening

Data screening should be done to purify the data from any errors or missing data (Creswell 2012). Missing responses are usually made when respondents do not answer one or more questions.

Missing data: A four-step process has been proposed to find missing values and apply remedies (Hair et al 2010):

1. Determine the Type of Missing Data

There are two kinds of missing data called ignorable and not ignorable. For ignorable, there is no need to do anything regarding missing values because the approval for missing data is inherent in the technique used (Little & Rubin 1987).

Not ignorable missing data are made when respondents do not have sufficient information or opinion about a question.

2. Determine the extent of missing data

The best way to find out the extent of missing data is through computing the percentage of missing data for each item and the number of cases with missing data for each item (Hair et al. 2010). The rule of thumb for ignoring missing data is when the percentage of missing responses is less than 10 percent (Bennett 2001). Furthermore, if the number of responses is enough to do the statistical analysis, there is no need to replace missing data (Hair et al. 2010).

3. Examining the patterns of the missing data process

This stage is for assessing whether data are missing at random (MAR) or missing entirely at random (MCAR) (Schlomer, Bauman & Card 2010).

4. Select the Imputation Methods

There are seven different imputation methods, including substituting missing values with a neutral value, casewise deletion and pairwise deletion (Malhotra 2010). In sum, to assess the degree of missing data, researchers have to find out what the number of missing data is and what the missing data patterns are. As described before, section one, which includes 'background' data of the respondents, has some missing data; however, these data do not need any remedies.

Except for socioeconomic factors such as income and postcode, respondents had to answer questions related to measurement items in order not to have missing data. In addition, due to the direct transferring of raw data to a spreadsheet, data entry error (Evans & Mathur 2005) was avoided. Similarly, the online survey options made available to the research participants ensured that they could not insert an incorrect value that fell beyond a specific range.

Assessment of outliers

To examine the distribution of the latent variable, the presence of outliers was checked. The presence of outliers can result in unrealistic data, which skew the

results (Field 2013). However, we must determine whether to keep or remove the cases with outliers (Hair et al 2014). Using the Box and Whisker (BoxPlot) approach, I could detect and omit five cases as outliers.

Assessment of Common Method Variance

Common Method Variance (CMV) is a variance that is "attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff, Mackenzie & Lee 2003, p.879). Common Method Variance (CMV) is a potential problem in behavioural research (Podsakoff, Mackenzie & Lee 2003) because it makes the measured relationship between two constructs inflate or deflate compared to their true value (Cote & Buckley 1988). While it may be a source of loss of construct validity, it cannot be found via a standard measure of discriminant and convergent validity (Straub, Boudreau & Gefen 2004).

To identify the CMV, a post hoc Harman one-factor analysis was applied to examine whether variables in the data are largely attributed to a single factor (Andersson & Bateman 1997). Using SPSS statistics 20, the un-rotated factor analysis was performed. The result was satisfactory and CMV was not a serious threat for analysing the data because the first factor accounted for just 30% of the total variance.

3.9.3.3. Preliminary data analysis

As discussed in Section 3.7.3.1, respondents are people who have/had a smartphone before. Data collection started in August 2013 and finished in September 2013. The self-administered questionnaire was distributed to 783 consumers with smartphone experience and 415 usable questionnaires were returned, le, indicating a survey response rate of 54.6%. Since this research study was undertaken with Australian respondents, data from all states and territories was sought. However, most respondents were based in Victoria (30%), followed by New South Wales (29.3%), Queensland (16%), South Australia (10%), Western Australia (8%), Tasmania (3%) and Australian Capital Territory (1%) (table 3.30).

Table 3.30. Respondents' locations

No	Territories	Number of respondents
1	New South Wales	122
2	Victoria	125
3	Queensland	68
4	South Australia	43
5	Western Australia	35
6	Tasmania	14
7	Australian Capital Territory	7
Total	Total Contribution	414
	Missing value	1
	Total	415

Furthermore, the researcher sought a sample representative of all age groups and both genders. Males comprised 45.2% of the total samples and females, 54.6%. Table 3.31 summarises the demographic characteristics of the participants. Respondents from different age groups who represent the smartphone users answer the survey questions

Table 3.31. Demographic information of respondents

	%	N	Percent %
Gender	Female	227	54.6
	Male	188	45.4
	Total	415	100
Age	18-24	35	8.43
	25-29	38	9.15
	30-35	49	11.8
	36-39	41	9.87
	40-44	43	10.36
	45-48	42	10.12
	49-54	47	11.32
	55-59	49	11.8
	60-64	36	8.67
	65+	35	8.43
	Total	415	100
Highest Level of education	Less than high school	29	7
	Completed high school	108	26
	Completed vocational training (TAFE)	110	26.5
	Completed University	168	40.5
	Total	415	100
Salary	No income	28	6.75
	Less than 30k	124	29.88
	30k-60k	120	28.92
	60k-90k	76	18.31
	90k-120k	45	10.84
	>120k	22	5.30
	Total	415	100

The participants also came from various occupation categories. As shown in table 3.32, the “professional” category had the highest number of respondents (20.2%), followed by clerical and administrative (14.9%) work and retired (14.5%). The lowest number of respondents belonged to the “machinery operator and driver” group.

Table 3.32. Occupation categories

No	Occupation	Frequency	Percent
1	Manager or Administrator	54	13.0
2	Labourer or Unskilled worker	15	3.6
3	Professional	84	20.2
4	Technician	15	3.6
5	Community and Personal service worker	7	1.7
6	Clerical and Administrative worker	62	14.9
7	Sales worker	16	3.9
8	Machinery operator and driver	5	1.2
9	Trades such plumbers and electricians	6	1.4
10	Unemployed	17	4.1
11	Home duties (not otherwise employed)	35	8.4
12	Retired	60	14.5
13	Student	25	6.0
14	Others	14	3.5
15	Total	415	100.0

Appendices 2 to 5 present the descriptive statistics for the measurement items used in this thesis. A 5-point Likert scale is used to evaluate each item. Scale 5 represents ‘strongly agree’, 4 represents ‘ agree’, 3 represents ‘Neutral or uncertain’, 2 represents ‘disagree’ and 1 represents ‘strongly disagree’. The results show that except for ten measurement items measuring social value (S1-S7), emotional value (E6), purchase intention (I3) and aesthetics (A20), most of the measurement items fall between Strongly agree (5) to Neutral (3). Furthermore, some information regarding the usage of smartphones for respondents was collected (appendix 4).

3.10. Ethical Considerations

The final section of the chapter relates to the ethics of data collection. In order to consider the ethical aspects of both the qualitative (focus group) and quantitative phases (pilot and final online survey) of the study, a research protocol was developed. Formal research approval was achieved from the University of Western Sydney’s Human Research Committee (HRC).Upon gaining approval, from the HRC, data collection was undertaken.

3.11. Conclusion

This chapter described the research methodology used. It outlined the research plan and gave details of the exploratory research phase as well as discussed the design and administration of the questionnaire. The need for quantitative data, using a self-administrated questionnaire, was justified. The measurement items for each of the proposed latent variables were developed using previously tested and validated scales and where new latent variables were introduced, the measurement items were developed from the relevant literature review. Furthermore, the choice of sample was justified followed by the development and evaluation of the measurement instrument. The rationale behind choosing Partial Least Square (PLS) as a method for analysis was justified. In addition, the statistical techniques used to examine the proposed research hypothesis were explained.

Further, data were prepared, screened and edited in order to find the missing data and outliers. The first stage of the data analysis was to prepare the data for

analysis by editing the data collected, via the questionnaire, and coding question items. Data screening was also executed to appraise whether there are any missing data and outliers. Once this was completed, the range of respondents was analysed in order to find out whether the sample was representative of all ages, genders and education groups. Respondents ranged from 18-24 years old (8.4%) up to older than 65 (8.4%) and were sampled from different states within Australia using quota sampling.

In addition, two stages of model validation were addressed. Finally, ethical consideration made during the data collection stage was identified. The next chapter presents an analysis of the collected data and the findings are presented in relation to the research problem.

Chapter 4

Analysis and results of the proposed model

4.1. Introduction

This chapter presents the results from testing the proposed hypotheses. Section 4.2.1 reports the results of reliability and validity of each latent variable, which include the results of both the measurement model and the structural model. This is followed by section 4.2.2, which shows the types of relationships between latent variables (LVs) and tests the proposed hypotheses. Next, the relationship between latent constructs are visualised in section 4.2.3. In the end, a summary is presented in section 4.3.

4.2. Analyses and results of PLS approach

PLS-SEM is used to assess the hypotheses developed from the proposed theoretical framework in chapter 2. Chin (2010) recommends first analysing the reliability and validity of the measurement model and then to check the proposed research hypotheses by analysing the structural model as a two–step approach to examine the data. Thus, Warp-PLS software is used to assess the measurement and the structural model simultaneously. In the first step, the measurement model stage, the analysis is conducted by specifying the relationship between the manifest variables and its proposed theoretical construct. Once an acceptable level has been achieved, as described in section 4.2.1.1 to 4.2.1.5, the next stage is to evaluate the causal relationships between exogenous (independent) and endogenous (dependent) constructs in the structural model (section 4.2.2).

4.2.1. Outer model assessment: Assessing the reliability and validity of reflective constructs

Each of the constructs under consideration, functional, social and emotional value, is assessed for reliability features using factor analysis. Validity is assessed using convergent and discriminant validity (described in section 3.9.1.1). Only reflective constructs should be evaluated for their validity and reliability (Hair et al. 2014). Thus, as mentioned before, assessment of reflective outer models is based on four criteria (Henseler et al. 2009; Hair et al. 2011):

1. Measuring indicator reliability (squared standardised outer loading)
2. Internal consistency reliability (Cronbach's Alpha and Composite Reliability)
3. Convergent validity (Average Variance Extracted, AVE)
4. Discriminant validity (cross-loadings Fornell-Larcker criterion)

A confirmatory factor analysis used principal components as the means of extraction and oblique rotation in order to check the reliability and validity. The rule of thumb for accepting the reliability of constructs is that a latent variable should explain at least 16% of its variance. That is, an indicator's outer loading should be above 0.4 because that number squared (0.4) equals 0.16 (Hair, Ringle & Sarstedt 2011). However, if the loading is between 0.4 and .07, the effect of item removal on the Composite Reliability should be checked, as well as on the construct content validity; that is, if a variable contributes to content validity of the measurement model, it should be retained.

Cronbach's Alpha, as the traditional measure for internal consistency, is used to provide an estimate of the reliability based on inter-correlations of the observed indicator variables (Hair et al.2014). Warp-PLS 4.0 calculated these values from model estimates. Since Cronbach's Alpha is sensitive to the number of items in the scale and it may even underestimate the internal consistency reliability, Composite Reliability is also computed (Hair et al 2014).

It is interpreted as the same way as Cronbach's Alpha. Using 0.7 as a cut-off value of Composite Reliability and Cronbach's Alpha, all the latent variables had to

demonstrate an acceptable level of internal consistency reliability. Convergent validity is “the extent to which a measure correlates positively with alternative measures of the same construct” (Hair et al. 2014, p.115). To check the convergent validity, the Average Variance Extracted (AVE) was measured. As mentioned before (in table 3.28), an AVE value of 0.5 and higher indicates an acceptable degree of convergent validity (Hair, Ringle & Sarstedt 2011).

4.2.1.1. Reliability and convergent validity of latent variables of aesthetics

Reliability and convergent validity of each reflective latent variable of aesthetics are measured based on the criteria mentioned in section 4.2.1.

Assessing the reliability and convergent validity of aesthetic construct - Colour

The first latent construct, colour, was measured by nine indicator variables. The individual item reliability was measured by viewing factor loadings and cross-loadings. The result showed that items 9.3, 9.6 and 9.7 had to be deleted because their values were lower than 0.5. Furthermore, by deleting the three items mentioned before, the value of Composite Reliability (CR) and Cronbach’s Alpha (CA) increased (0.9). The result showed that all loadings were higher than 0.7. Thus, all the measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (Table 4.1).

Both Cronbach’s Alpha (CA) and Composite Reliability (CR) values were greater than 0.7 as a cut-off value (table 4.1). Thus, internal consistency reliability was approved for colour. Furthermore, the AVE is 0.7, which is greater than 0.5 as the cut-off value, showing an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

Table 4.1. The internal consistency reliability and convergent validity of colour

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Colour	q9-2	(0.88)	0.9	0.9	0.7	6
	q9-1	(0.86)				
	q9-8	(0.87)				
	q9-5	(0.87)				
	q9-9	(0.85)				
	q9-4	(0.80)				

Assessing the reliability and convergent validity of aesthetic construct - Shape

The second latent construct, shape, was measured by four indicator variables. The result showed that all loadings on the latent variables were higher than 0.7. Thus, all the measurement items in table 4.2 illustrated a satisfactory level of individual item reliability (Hair et al. 2014). Table 4.2 shows the values of Cronbach's Alpha and Composite Reliability are greater than 0.7, which shows the acceptable level of internal consistency reliability for shape.

Table 4.2. The internal consistency reliability and convergent validity of shape

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Shape	q9-17	(.85)	0.8	0.9	0.7	4
	q9-18	(.75)				
	q9-16	(.88)				
	q9-15	(.85)				

In addition, the AVE value is .73, which shows an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

Assessing the reliability and convergent validity of aesthetic construct - Touch

Touch, as a latent construct of aesthetics, was measured by four indicator variables. The result showed that all loadings on the latent variables, were higher than 0.7. Thus, all the measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (table 4.3).

Table 4.3. The internal consistency reliability and convergent validity of touch

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Touch	q9-19	(.76)	0.9	0.9	0.7	4
	q9-20	(.90)				
	q9-29	(.89)				
	q9-30	(.91)				

Table 4.3 shows the values of Cronbach's Alpha and Composite Reliability are greater than 0.7, which illustrates that touch demonstrated an acceptable level of internal consistency reliability. In addition, the AVE value is .73, which shows an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

Assessing the reliability and convergent validity of aesthetic construct - Design

Design, as a latent construct of aesthetics, was measured by four indicator variables. The result showed that all loadings on the latent variables were higher than 0.7. Thus, all the measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (table 4.4). Furthermore, table 4.4 shows the values of Cronbach's Alpha (CA) and Composite Reliability (CR) are greater than 0.7, which illustrates that shape demonstrated acceptable level of internal consistency reliability. In addition, the AVE value is .73, which shows an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

Table 4.4. The internal consistency reliability and convergent validity of design

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Design	q9-13	(.93)	0.9	0.9	0.8	3
	q9-12	(.87)				
	q9-11	(.87)				

Assessing the reliability and convergent validity of an aesthetic construct - Overall appearance

Overall appearance as a latent construct of aesthetics was measured by three indicator variables. Item 9.22 was deleted because of low loading (0.3). Item 9-21 and 9-23 had high loadings with both design and overall appearance (λ= 0.4).

Even by deleting each item the AVE did not change and was lower than 0.7. Thus, the results show that these items did not pass the satisfactory level of individual item reliability, which is consistent with Swilley's (2012) claim that overall appearance cannot be a latent construct of aesthetics.

Assessing the reliability and convergent validity of an aesthetic construct – Beauty

Beauty was measured by two indicator variables. The variable items 9.14 and 9.26 as factors of beauty were deleted from the measurement model. Both items were deleted because of low loadings (0.3). Thus, the results show that these items did not pass the satisfactory level of individual item reliability. In this way, beauty was tested and rejected.

4.2.1.2. Assessing the reliability and convergent validity of the components of perceived value

As mentioned in section 3.9.1, cross and pattern loadings are used to assess the individual item reliability for all factors of aesthetics (table 4.5). Items of each factor were supposed to have a high loading with its own latent variable.

Table 4.5. Loading and Cross-loading of each perceived value and purchase intention items

Items	Functional	Social	Emotional	Intention
q10-1	**(.89)**	.06	-.10	-.07
q10-2	**(.90)**	-.00	-.07	.03
q10-3	**(.79)**	.04	.17	-.07
q10-4	**(.87)**	.00	-.11	.07
q10-6	**(.83)**	-.07	-.02	.03
q10-8	**(.78)**	-.04	.09	.00
q11-1	.02	**(.95)**	.00	.01
q11-2	.02	**(.94)**	.02	-.03
q11-4	-.05	**(.89)**	.04	-.05
q11-5	.01	**(.91)**	-.07	.07
q12-1	.00	-.02	**(.79)**	.03
q12-2	.03	-.13	**(.95)**	-.00
q12-3	-.05	.11	**(.73)**	.02
q12-4	.01	-.08	**(.95)**	-.03
q12-5	.00	.14	**(.74)**	-.01
q13-1	.06	.23	-.10	**(.77)**
q13-2	-.03	-.05	-.00	**.95**
q13-3	-.06	.04	-.07	**.91**
q13-4	0.2	-0.5	.40	**.56**

Reliability and convergent validities were checked for each measurement factor as explained below.

Assessing the reliability and convergent validity of functional value

Functional value was measured by eight indicator variables. Individual item reliability was measured by viewing factor loadings and cross-loadings (table 4.6). The result showed that items 9.5 and 9.7 had to be deleted because of their loadings which were lower than 0.5.

Table 4.6. The internal consistency reliability and convergent validity of functional value

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Functional Value	q10-1	(0.9)	0.9	0.9	0.7	6
	q10-2	(0.90)				
	q10-3	(0.8)				
	q10-4	(0.8)				
	q10-6	(0.8)				
	q10-8	(0.8)				

By deleting the two items, the value of Composite Reliability (CR) and Cronbach's Alpha (CA) increased (0.9). Thus, the analysis was undertaken again to check the reliabilities of other items when two items were deleted. The result showed that all loadings on the functional value were higher than 0.7. Thus, all the measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (table 4.6).

For the internal consistency reliability, Cronbach's Alpha and Composite Reliability were measured. Table 4.6 shows functional value demonstrated an acceptable level of internal consistency reliability. Furthermore, the AVE value is 0.7, which shows an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

Assessing the reliability and convergent validity of social value

Social value was measured by six indicator variables. The result showed that items 10.3 and 10.6 had loadings lower than 0.4. Thus, both of them were deleted and the measurement factor was analysed again. This time, all the measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (table 4.7). For internal consistency reliability, Cronbach's Alpha and Composite Reliability were measured. The values of Cronbach's Alpha and Composite Reliability were both 0.9, which illustrate acceptable levels of internal consistency reliability.

Table 4.7. The internal consistency reliability and convergent validity of social value

Construct	Measurement Items	Loadings	CR	CO	AVE	Number of Items
Social Value	Q11-1	0.9	0.9	0.9	0.8	4
	Q11-2	0.9				
	Q11-4	0.9				
	Q11-5	0.9				

In addition, the AVE value is 0.8, which shows an acceptable level of convergent validity (Hair, Ringle, & Sarstedt 2011).

Assessing the reliability and convergent validity of emotional value

Emotional value was measured by six indicator variables. The result showed that one item had a loading lower than 0.4. Hence, it was deleted as a variable item of emotional value. This time, all the measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (table 4.8). The values of CA and CR were both 0.9, which illustrated acceptable levels of internal consistency reliability.

Table 4.8. The internal consistency reliability and convergent validity of emotional value

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Emotional Value	Q12-1	0.8	0.9	0.9	0.7	5
	Q12-2	0.9				
	Q12-3	0.7				
	Q12-4	0.9				
	Q12-5	0.7				

Also, the AVE value is 0.7, which shows an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

4.2.1.3. Assessing the reliability and convergent validity of purchase intention

Purchase intention was measured by six indicator variables. The result showed that items 10.3 and 10.6 had loadings lower than 0.4. Thus, both of them were deleted and the measurement factor was analysed again resulting in Composite Reliability, Cronbach's Alpha and AVE increasing (0.9 and 0.7). However, item 13.3 had a loading less than 0.7 (λ= .56). Since deleting this item would lead to a decrease in AVE and Composite Reliability, it was retained. Other measurement items illustrated a satisfactory level of individual item reliability (Hair et al. 2014) (table 4.9).

Table 4.9. The internal consistency reliability and convergent validity of purchase intention

Construct	Measurement Items	Loadings	CA	CR	AVE	Number of Items
Purchase Intention	Q13-1	0.7	0.8	0.9	0.7	4
	Q13-2	0.9				
	Q13-3	0.9				
	Q13-4	0.56				

Also, the AVE value of 0.7 shows an acceptable level of convergent validity (Hair, Ringle & Sarstedt 2011).

4.2.1.4. Discriminant Validity

To ascertain whether each construct was distinct from other constructs, discriminant validity was established. Hair et al. (2014) propose two measures of discriminant validity:

1. Firstly, to check the discriminant validity of first order factors, the researcher had to measure the cross loadings of indicators in a way that an indicator's outer loading on the associated construct has to be greater than all of its loadings on other constructs (Hair et al. 2014).

2. Secondly, the Fornell-Larcker criterion is used. It compares the square root of the AVE values with the reflective latent variable correlations (Hair et al 2014) to explore whether a construct shares more variance with its associated indicators than with any other construct.

Discriminant validity of aesthetic variables

Cross loadings are used to assess the discriminant validity of all factors of aesthetics. Table 4.10 shows that all indicators load significantly on their constructs and had high loadings with only one factor, which shows the acceptable level of discriminant validity.

Table 4.10. Loading and Cross-loading of measurement items of aesthetics (Individual Item Reliability)

Items	Colour	Shape	Touch	Design
q9-2	**(.88)**	-.02	.01	.05
q9-1	**(.86)**	-.03	-.02	.07
q9-8	**(.87)**	-.02	-.03	-.02
q9-5	**(.87)**	-.05	-.06	-.04
q9-9	**(.85)**	.07	-.04	-.02
q9-4	**(.80)**	.05	.14	-.06
q9-17	-.01	**(.85)**	-.01	.02
q9-18	-.01	**(.75)**	.01	.08
q9-16	.03	**(.88)**	-.02	-.14
q9-15	.04	**(.85)**	.02	-.14
q9-19	.05	.05	**(.76)**	.12
q9-20	-.00	-.05	**(.90)**	.03
q9-29	-.00	.02	**(.89)**	-.06
q9-30	-.04	-.01	**(.91)**	-.07
q9-13	.01	-.05	-.08	**(.93)**
q9-12	-.01	.06	.05	**(.87)**
q9-11	-.002	-.01	.03	**(.87)**

Bold values are loadings for items, which are above the recommended value of 0.5

In order to measure discriminant validity among reflective measures of aesthetics based on the Fornell-Larcker criterion, I had to measure the square root of the AVE. The diagonal of the matrix includes the square roots of the AVEs. These must be greater than off-diagonal elements in the corresponding row and columns to affirm the discriminant validity (Hair et al. 2014). As shown in table 4.11, the diagonal elements are greater than the off-diagonal elements in the corresponding rows and columns. Table 4.11 illustrates adequate discriminant validity for the constructs of aesthetics.

Table 4.11. The discriminant validity of the variables of aesthetics

Constructs	Colour	Shape	Touch	Design
Colour	**(.86)**	.22	.26	.27
Shape	.22	**(.83)**	.33	.49
Touch	.26	.33	**(.87)**	.42
Design	.27	.49	.42	**(.89)**

The result shows that there was no correlation between any two latent variables larger than or even equal to the square root of AVEs. Thus, this finding provides evidence of discriminant validity among the components and the constructs of aesthetics in the proposed conceptual model.

Discriminant validity of the components of perceived value and purchase intention

The cross loadings of each construct were measured to assess the discriminant validity of all factors of aesthetics (table 4.12). Table 4.12 shows that all indicators load significantly on their constructs and had high loadings with only one factor. Thus, the convergent validity is confirmed for all the dimensions of perceived value as well as purchase intention.

Table 4.12. Loading and cross-loading of each of the items of perceived value and purchase intention

Items	Functional Value	Social Value	Emotional Value	Purchase Intention
q10-1	**(0.89)**	0.06	-0.10	-0.06
q10-2	**(0.90)**	0	0	0.03
q10-3	**(0.79)**	0.04	0.16	-0.07
q10-4	**(0.87)**	0	-0.11	0.07
q10-6	**(0.83)**	-0.06	-0.02	0.03
q10-8	**(0.77)**	-0.03	0.08	0
q11-1	0.02	**(0.95)**	0	0.01
q11-2	0.02	**(0.94)**	0.02	-0.02
q11-4	-0.05	**(0.89)**	0.04	-0.05
q11-5	0	**(0.92)**	-0.07	0.07
q12-1	0	-0.02	**(0.79)**	0.04
q12-2	0.03	-0.13	**(0.95)**	-0
q12-3	-0.05	0.11	**(0.73)**	0.02
q12-4	0.01	-0.08	**(0.95)**	-0.03
q12-5	0	0.14	**(0.74)**	-0.01
q13-1	0	0.27	-0.10	**(.77)**
q13-2	-0.02	-0.05	0	**.95**
q13-3	-0.06	0.04	-0.07	**.91**
q13-4	0.2	-0.48	0.40	**.56**

The Fornell-Larcker criterion was also calculated in order to measure the discriminant validity among reflective measures of different types of perceived value and purchase intention. The diagonal of the matrix includes the square roots of the AVEs that must be greater than off-diagonal elements in the corresponding row and columns to affirm the discriminant validity (Hair et al. 2014). As shown in table 4.13, the diagonal elements are greater than the off-diagonal elements in the corresponding rows and columns. Thus, the findings provide evidence of discriminant validity among the components and the constructs.

Table 4.13. The discriminant validity of the measurement constructs

Constructs	FV	SV	EV	PI
Functional Value (FV)	**(.85)**	-.34	.14	-.15
Social Value (SV)	-.34	**(0.92)**	.41	.73
Emotional Value	.13	.41	**(.84)**	.44
Purchase Intention	-.15	.73	.440	**(0.80)**

In sum, based on the analysis performed, the measurement model in the study indicated adequate discriminant validity, which means that all the reflective latent variables proposed in the hypothesised model are different from each other.

4.2.1.5. Validity of the formative construct-aesthetics

In order to measure the validity of aesthetics as a formative factor, two different measures were used (Hair, Ringle & Sarstedt 2011): a variation inflation factor (VIF) and the variable's weight. VIF pinpoints the degree of multicollinearity among the Latent Variables (LVs) that are hypothesised to affect another LV as a formative factor (Kock 2011). In the context of PLS-SEM, A VIF value of five implies that 80 percent of an indicator's/latent variables' variance is accounted for by the remaining formative indicators/variables related to the same construct, which is an indication of potential multicollinearity problems.

The significance of the estimated indicator weights can be determined by means of bootstrapping (Tenenhaus et al. 2005). Table 4.14 displays the VIF for correlations between constructs and aesthetics. VIF for all these constructs were all lower than five (Hair et al. 2014; Kock 2011), which indicate the low degree of redundancy of each measurement model construct.

Table 4.14. The indicator weights and variance inflation factors

Construct	VIF	Variable weight	P-value
Colour	1.1	(0.39)	< .001
Shape	1.3	(0.23)	< .001
Touch	1.3	(0.36)	< .001
Design	1.5	(0.41)	< .001

The coefficients of variables (outer weight) were measured in order to ascertain whether they were significantly different from zero as a cut-off value. Results illustrated in table 4.14 show all variables were significantly ($p<.001$) higher than zero.

4.2.1.6. Review of the measurement model (stage one)

To explore the validity and reliability of each latent variable in the first stage of model validation, three criteria were measured: individual item reliability, convergent validity and discriminant validity. Factor loadings were used to assess individual item reliability. As shown in stage one, loading of all measurement items exceeded the recommended value of 0.5 indicating an acceptable level of individual item reliability. Next, Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) were used to evaluate the Convergent Validity (CV). Results showed that all values are above the recommended levels of 0.6 for CA, 0.7 for CR and 0.5 for AVE.

The findings made by using cross loadings of indicators and the square root of AVEs, provide evidence of discriminant validity among the components and the constructs of the structural model. At the end, variance and outer weight were assessed to examine the multicollinearity of the first order constructs of latent variables with aesthetics as a formative factor. VIF for all these constructs were all lower than five proving the low degree of redundancy of each measurement model construct. Furthermore, all the outer weights were significantly higher than zero, which is another measure of no multicollinearity among variables. With satisfactory

results for reliability and validity, the next stage is to analyse the structural model to test the research hypotheses.

4.2.2. Inner model assessment - assessing the structural model (stage two)

The next stage is to assess the explanatory power of the structural model and to test the proposed research hypotheses in Chapter 3. The causal structure of the model is measured to examine the relationships among the constructs defined in the proposed framework through the estimation of the coefficient of determination (R^2), path coefficient, effect size (f^2) and predictive relevance. The most important evaluation measures, for evaluating how well the data support the hypothesised model in PLS-SEM, are non-parametric evaluation criteria like R^2 values and significance of path coefficients (loadings and significance) (Hair et al. 2014).

In the proposed theoretical framework discussed in Chapter 3, the underlying constructs were classified into two classes: exogenous constructs (Design, Colour, Shape and Touch); and endogenous constructs: aesthetics (AE), social value (SV), functional value (FV), emotional value (EV) and purchase intention (PI)). As shown in Table 4.15, the proposed hypotheses are presented in four causal paths to determine the relationships under consideration for the constructs.

Table 4.15. Proposed hypotheses

Hypotheses No.	Hypotheses
H_1: AE to PI	Aesthetics has a positive and direct impact on purchase intention
H_2: AE to FV to PI	Functional value is a mediator between aesthetics and purchase intention
H_3 : AE to SV to PI	Social value is a mediator between aesthetics and purchase intention
H_4 : AE to EV to PI	Emotional value is a mediator between aesthetics and purchase intention

4.2.2.1. Assessment of Coefficient of Determination, R^2

R^2 is computed by Warp-PLS 4.0 for the dependent variables in the model. There is no specific rule of thumb for acceptable R^2values. However, R^2 values of 0.2 are considered high in the consumer behaviour discipline (Hair et al 2014, p.175; Hair, Ringle & Sarstedt 2011). Table 4.16 shows the R^2 for each of the endogenous variables defined in the proposed theoretical model.

Table 4.16. The coefficient of determination (R2) for each endogenous variable

	FV	SV	EV	PI	AE
FV					.08
SV					0.1
EV					0.4
PI	0.1	0.5	0.2		0.1

Aesthetics can explain 40% (R^2= 0.4) of the variance in emotional value showing the high relationship between aesthetics and emotional value and indicating higher level of predictive accuracy. However, it explains only 10% of variance in social value and purchase intention. Thus, aesthetics cannot be a good predictor of purchase intention. Social value can explain 50% of variance (R^2= 0.5) in PI which is high, followed by emotional (0.2) and functional value (0.1).

4.2.2.2. Assessment of effect size - f^2

Effect size (f^2) is used to understand the impact of an exogenous construct on an endogenous one (Hair et al. 2014). It is calculated as "the increase in R^2 relative to the proportion of variance of the endogenous latent variable that remains unexplained" (Chin 1998, p.304). Table 4.17 shows the effect size of the endogenous variables defined in the theoretical framework.

Table 4.17. The effect size, f^2, of the exogenous constructs on endogenous LVs

Endogenous variable	FV	SV	EV	PI	AE	Result
Functional Value (FV)					0.08	AE has small effect on FV
Social Value (SV)					0.1	AE has medium effect on SV
Emotional Value (EV)					0.4	AE has large effect on EV
Purchase Intention (PI)	.01	0.5	.07		.02	AE has small effect on PI FV has trivial effect on PI SV has large effect on PI EV has small effect on PI
Aesthetics (AE)						

The values of effect sizes were between .01 and 0.5. Although it did not have an important impact on purchase intention (.02), aesthetics' effect on emotional value is large (0.4) and on social value is medium (0.1). Furthermore, it has a small effect on functional value (.08). While social value's effect on purchase intention (0.5) is large, functional value's impact on purchase intention is too weak (.01) to be considered as a mediator.

4.2.2.3. Predictive Relevance- Q^2

A nonparametric Stone-Geisser test was measured using blindfolding (Kock 2011). Q^2 assesses the predictive validity (or relevance) associated with each latent variable in the proposed theoretical model and is applied to endogenous constructs that have a reflective measurement model (Kock 2011). The rule of thumb for acceptable predictive validity of a path model for selected, reflective endogenous latent variables is above zero (Hair et al. 2014). Table 4.18 shows that the path model has predictive relevance.

Table 4.18. Results of predictive relevance of the proposed model

Endogenous LVs	Q^2
Functional Value (FV)	.08
Social Value (SV)	0.1
Emotional Value (EV)	0.4
Purchase Intention (PI)	0.6

4.2.2.4. Assessment of proposed hypotheses

In this section, all the hypotheses proposed and shown as paths from aesthetics to purchase intention in Chapter 2 are assessed. Each path related to each proposed hypothesis in this thesis. The test of each hypothesis is done by computing the sign, size and statistical significance of the path coefficient (β) between latent constructs and their dependent variables. That is, the higher the path coefficient, the stronger the effect of the latent variable on the dependent variable. Almost all the significance of the path coefficients is assessed using the bootstrapping technique undertaken by Warp-PLS 4.0 (the default value).

To understand the relationship between aesthetics and purchase intention when the components of perceived value are present, I evaluate whether aesthetics has a full, partial or indirect relationship with purchase intention. In order to omit any bias made by control variables, age, gender and education were used as controllers on the relationship between aesthetics, perceived value and purchase intention. In order to understand whether the result is robust and the sample is a cross-section of the population, I explore the role of gender, age, education and income on the direct and indirect relationship between aesthetics and purchase intention using multi-group analysis for the relationships between constructs.

Assessment of the direct relationship between aesthetics and purchase intention

Following Preacher and Hayes (2004, 2008), the direct relationship between aesthetics (AE) and purchase intention (PI) is first measured. The results shown in table 4.19 confirmed that p-values are significant, which means that AE has a direct relationship with PI.

Table 4.19. Significance analysis of path coefficients without the mediators

Hypotheses	Beta, β	P-Value	f^2	R^2	Hypotheses
H_1: AE to PI	0.2	.01	.07	.08	Supported

However, the value of R^2 is 0.08, which means that aesthetics can only explain 8% of the variance of purchase intention, which is weak (Chin 1998, p.323). Thus, other factors may mediate this relationship and increase the R^2. Since the direct relationship is significant, I go further (Hair et al. 2014) and check whether different components of demographic variables can influence this relationship positively or negatively. Respondents are divided in to two different groups based on their genders in order to explore whether gender was an important controller of the relationship between AE and PI (Table 4.20). As seen in table 4.20, there is no difference between male and female in the direct relationship between aesthetics and purchase intention. The Path coefficient for both groups is low and aesthetics could not explain a more than 80% variance of aesthetics appreciation.

Table 4.20. Gender influence in the relationship between AE and PI

Gender	Path coefficient AE–PI	P-value	Effect size	R^2
Male	.2	.006	.1	.2
Female	.3	.006	.1	.2

To examine the impact of age as a controller of the path between AE and PI, the significance of the link between AE and PI was measured for three different age

groups: Baby boomers (49-65 years old); Gen X (36-48) ; and Gen Y (18-35 years old) (table 4.21). Except for the Gen X, the path was significant for the other groups. The role of age as controller on the path between AE and PI is weak since aesthetics could explain only 10% of variance in purchase intention (R^2= 0.1). Overall, there is little difference between age groups in their perceptions regarding whether aesthetic appreciation may have a direct relationship with purchase intention.

Table 4.21.The effects of age on AE-PI

Age	Path coefficient AE-PI	P-value	Effect size	R^2
Baby Boomers (49-65 years old)	0.3	.001	0.1	0.1
Gen X (36-48 years old)	0.2	.08		
Gen Y (18-35 years old)	0.2	.006	0.1	0.1

The effect of education was also checked to see whether there was any difference among groups of people with different educational backgrounds. As seen in table 4.22, aesthetics appreciation is more important for people who had completed vocational training (TAFE) or had a university degree, than people who had a diploma or less. Aesthetics appreciation can explain 20% of variance in aesthetics appreciation and the effect size is high.

Table 4.22. The effects of education background on AE-PI

Education	Path coefficient AE-PI	P-value	R^2	Effect size
Less than high school	0.3	0.1		
Completed high school	0.2	.13		
Completed vocational	0.4	.04	0.2	.15
Completed University	0.4	.01	0.2	0.1

Income was also used as a criterion that may influence respondents' aesthetic appreciation of an object. However, no differences were found (table 4.23).

Table 4.23.The effect of income on AE-PI

Income	Path coefficient AE-PI	P-value	Effect size	R^2
Less than 30k	0.3	.06		
30k-60k	0.4	.06		0.2
60k-90k	0.3	.07		0.1
90k-120k	0.4	.06		
>120k	-0.3	0.2		

Assessing the role of perceived functional value (FV) in the relationship between aesthetics (AE) and purchase intention (PI)

In order to assess whether aesthetics' relationship is mediated by perceived functional value, Hypothesis 2 was measured. As seen in table 4.24, the indirect relationship is not supported (P-value= .07). Thus, the link from AE to PI is direct and is not mediated by functional value (H_2 is not significant).

Table 4.24. Significance analysis of path coefficients

Path Coefficients	AE – FV- PI	P-value	R^2	Hypothesis
H2: β (Indirect): AE-FV-PI	-.04	.07	.15	Not supported

As shown in table 4.25, functional value as a mediator could not influence either male or female intention to purchase smartphones.

Table 4.25. Gender influence in the relationship between AE-FV- PI

Gender	Path coefficient AE-FV-PI	P-value	Effect size	R^2
Male	-.02	.21		
Female	-.04	.06		

The tests conducted found no difference in responses based on the demographic variables (Table 4.26, 4.27 and 4.28). The results support that functional attributes of smartphones did not significantly influence respondents' purchase intention decisions (p-value> 0.05).

Table 4.26. The effects of age on AE-FV-PI

Age	Path coefficient AE-PI	P-value	Effect size	R^2
Baby Boomers	-.033	.21	.005	.03
Gen X	-.124	.1	.002	.08
Gen Y	-.02	.3	.007	.01

Table 4.27. The effects of education background on AE-FV-PI

Education	Path coefficient AE-FV-PI	P-value	R^2	Effect size
Less than high school	-0.1	.3		
Completed high school	-.05	.08		
Completed vocational	-.067	.08		
Completed university	-.037	.15		

Table 4.28. The effect of income on AE-FV-PI

Income	Path coefficient AE-FV-PI	P-value
Less than 30k	-.11	.06
30-60k	-.03	.18
60k-90k	-.02	.37
90k-120k	-.06	0.2
>120k	-.32	.08

Assessing the role of perceived social value (SV) in the relationship between aesthetics (AE) and purchase intention (PI)

As shown in table 4.29, the indirect relationship between aesthetics and purchase intention via social value is supported (p-value < .001). Since the indirect effect is significant (H_3 is supported), the social value (mediator) absorbs some of the direct effect. Although the effect size is medium (f^2= .1), aesthetics could explain 60% of the variance of purchase intention, which is high.

In order to understand the extent to which the variance of purchase intention (dependent variable) is directly explained by the independent variable (aesthetics) and how much of the target construct's variance is explained by the indirect relationship via perceived functional value (the mediator variable), VAF was calculated (formula 4.1) (Hair et al.2014).

Table 4.29. Significance analysis of path coefficients for AE-SV-PI

Path Coefficients	β (AE-SV-PI)	P-value	f^2	R^2	Hypothesis
H3: β (Indirect): AE-SV-PI	.2	<.001	.1	.6	Supported

$$VAF=\frac{\beta\ (Indirect)}{\beta\ (Indirect)+\beta\ (direct)}=\frac{0.2}{.2+.2}=50 \quad (4.1)$$

Since VAF is larger than 20% and less than 80%, a partial mediation is established. Thus, the relationship between aesthetics and purchase intention can be both direct and indirect when it is mediated by social value. Although the effect size is medium (.1), aesthetics could explain sixty percent of the variance of purchase intention (R^2= 0.6) when its relationships is mediated by social value. Multi-group analysis was also done to make sure the result was not skewed toward gender difference.

There is a homogeneity between female and male groups in their perception of social value as a mediator between aesthetics and purchase intention. Aesthetic appreciation can lead to purchase intention when its relationship with purchase intention is mediated by social value. It can explain more than 50% of variance in purchase intention (table 4.30).

Table 4.30. The impact of gender on AE-SV-PI

Gender	Indirect path AE-SV-PI	P-value	Effect size	R^2
Male	0.2	.001	0.1	0.5
Female	0.2	.001	0.1	0.6

Evaluating the homogeneity of the three different groups (table 4.31), I found that the respondents from different age groups put social value as an important mediator in the intention to purchase a smartphone ($R^2 > 0.4$).

Table 4.31. The impact of age on AE-SV-PI

Age	Path coefficient AE-SV-PI	P-value	Effect size	R^2
Baby Boomers	.24	.003	0.1	0.6
Gen X	.22	.002	.04	0.6
Gen Y	0.2	.002	.05	0.4

The case is different for people with different educational backgrounds. For respondents who had degrees higher than a diploma, or had some vocational training, social value was an important criterion, which influences their purchase intention when choosing between different smartphones. The higher the education level, the more highlighted is the role of social value. The effect size is double for respondents who had a university degree compared to those with vocational training (table 4.32).

Table 4.32. The impact of education on AE-SV-PI

Education	Path coefficient AE-SV-PI	P-value	R^2	Effect size
Less than high school	0.4	.09		
Completed high school	0.4	0.2		
Completed vocational	0.3	.001	0.5	.05
Completed university	0.3	.001	0.6	.14

Regarding income, all groups in different income categories viewed social value as an important variable, which influences their purchase intention. All the R^2's were higher than 0.5 meaning that aesthetics could explain more than 50 percent of the variance in purchase intention when its relationship was mediated by social value (table 4.33).

Table 4.33. The impact of income on AE-SV-PI

Income	Path coefficient AE-SV-PI	P-value	R^2	Effect size
Less than 30k	0.2	.001	.53	.038
30-60k	0.35	.001	.6	.15
60k-90k	0.25	.021	.61	.07
90k-120k	0.35	.001	.54	.112
>120k	0.2	.05	.5	.1

Assessing the role of perceived emotional value (EV) in the relationship between aesthetics (AE) and purchase intention (PI)

As shown in table 4.34, the indirect relationship between aesthetics and purchase intention via emotional value is supported (p-value < .001). That is, emotional value can be a mediator between aesthetics and purchase intention (H_4 is supported). However, both effect size (f^2) and coefficient determinant (R^2) are low.

Table 4.34. Significance analysis of path coefficients

H_4: Path Coefficients	β (AE-EV-PI)	P-value	f^2	R^2	Hypothesis
Result	.2	<.001	.07	.2	Supported

Thus, VAF was measured in order to understand the nature of this mediation.

$$VAF=\frac{\beta\ (Indirect)}{\beta\ (Indirect)+\beta\ (direct)}=\frac{.2}{.2+.2}=50\%$$

Thus, the relationship between aesthetics and purchase intention can be both direct and indirect when it is mediated by emotional value. Furthermore, only 20% of the variance of purchase intention ($R^2 = 0.2$) is explained by aesthetics and the rest is explained by the indirect relationship via emotional value.

As seen in table 4.35, there is a consistency between males and females regarding the role of emotional value. Both genders viewed emotional value as an important mediator, which may influence their purchase decision. The aesthetic appreciation of a smartphone can lead to purchase intention when it is mediated by emotional value (p-value < 0.5). However, this mediation with emotional value is not as strong as with social value. Aesthetic appreciation can explain more than 20% of the variance in purchase intention when it is mediated by emotional value.

Table 4.35.The Impact of gender influence on AE-EV-PI

Gender	Indirect path AE-EV-PI	P-value	Effect size	R^2
Male	.2	.001	.05	.2
Female	.2	.001	.07	.3

Even dividing the respondents into three different age groups did not lessen the validity of the sample (table 4.36). All the three groups of respondents viewed emotional value as an important criterion. However, the influence of emotional value is not as strong as the impact of social value. Aesthetic appreciation could only explain between 10% and 30% of variance in purchase intention when its relationship with aesthetics was mediated by emotional value (R^2= 0.1 and 0.3).

Table 4.36. The impact of age on AE-EV-PI difference

Age	Path coefficient AE-EV-PI	P-value	Effect size	R^2
Baby Boomers	0.3	.01	0.1	0.3
Gen X	0.2	.002	.03	0.1
Gen Y	0.1	.03	.03	0.1

In relation to educational differences, the higher the educational background, the higher the importance of emotional value for respondents. For respondents with less than a high school degree, being emotionally attached to a smartphone does not mean they had a strong intention to purchase it. However, for respondents with a diploma or higher degree, respondents put more emphasis on emotional value, which could be seen in the value of R^2, effect size and the path coefficient (table 4.37).

Table 4.37.The impact of education on AE-EV-PI

Education	Path coefficient AE-EV-PI	P-value	R^2	Effect size
Less than high school	0.2	.14	0.1	.08
Completed high school	0.2	.002	0.1	.02
Completed vocational training	0.3	.001	0.2	.05
Completed University	0.3	.001	0.3	0.1

Regarding income level, in all participants, there is no discrepancy in results for different educational backgrounds. They all viewed emotional value to a smartphone as an important influence on intention to purchase. However, this effect is not as strong as social value (see R^2 for table 4.29 and 4.38).

Table 4.38. The impact of income on AE-EV-PI

Income	Path coefficient AE-EV-PI	P-value	R^2	Effect size
Less than 30k	0.2	.001	0.2	.04
30-60k	0.3	.001	0.3	0.1
60k-90k	0.3	.001	0.2	.008
90k-120k	0.3	.02	0.2	0.1
>120k	0.3	.02	0.2	0.1

4.2.2.5. Review of the structural model (stage two)

The results show that when social value mediates the relationship between aesthetics and purchase intention, the amount of variance explained increases by three times. That is, the intention to purchase (a smartphone) based on the appearance of smartphones is higher when a respondent's ideal smartphone is accepted by friends, group member, or families (R^2= 0.6), compared to when aesthetics is the only criterion for respondents (R^2= 0.1) (figure 4.1).

Purchase intention will increase when respondents are influenced by values they might gain by buying a product. Functional value is a weak mediator between AE and PI (p-value: .01). Consequently, the main paths to purchase intention are AE-SV-PI and AE-EV-PI. Both social and emotional value increases the effect size to .07. However, aesthetics has the greatest effect on emotional value (β= 0.6).That is, the higher the aesthetic appreciation of a smartphone, the greater the emotional value for the product. Aesthetics appreciation can even affect functional and social value (β = 0.3 and 0.6) (figure 4.1). Customers' perceptions of the utility of a product could be affected by the aesthetics of the product. That is, appearance amplifies a product's desirability through an appeal to the individual aesthetic sense.

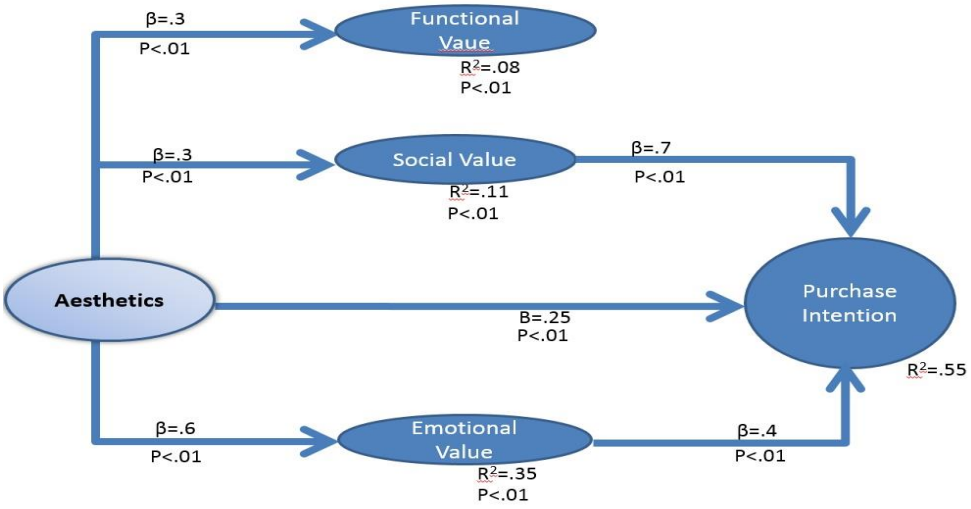

Figure 4.1. Estimated coefficients of the path analysis

Using demographic variables such as income, education and age, I could confirm the sample is a cross section of the population and there is no significant difference among groups based on these variables.

This section reviews stage two of the model validation. At this stage, the structural model was examined based on the proposed relationship between the latent variables of the hypothesised model. The proposed structural model was specified to test four paths, which are represented in the hypotheses. Based on the results obtained, there is a weak direct link from AE to PI (R^2=.08) showing that different dimensions of perceived value should be used as mediators. In addition, the hypothesised model best fits the data when H_3 and H_4 are accepted and hypothesis H_2 rejected.

4.2.3. Warped relationships between latent variables

The relationships between latent variables, based on the changes in standard deviation are visualized with the help of plots provided by WarpPLS 4.0 (figures 4.2 to 4.5).The term “warped” is used for relationships that are nonlinear (Kock 2011). Table 4.39 illustrates the association between aesthetics, purchase intention, and social and emotional value. It shows a warped relationship between these variables.

Table 4.39. The relationship between aesthetics and other latent constructs

	SV	EV	PI	AE
SV		Warped		Warped
EV				Warped
PI	Warped	Warped		
AE				

Aesthetics has a positive and significant relationship with social value (figure 4.2).The plot depicts a flat curve with a stable positive slope. The interpretation of the beta coefficient (figure 4.2) is as follows: one standard deviation increase in aesthetics leads to a 0.3 standard deviation increase in social value. That is, higher aesthetic appeal of a product seems to lead to higher social value perceived by customers.

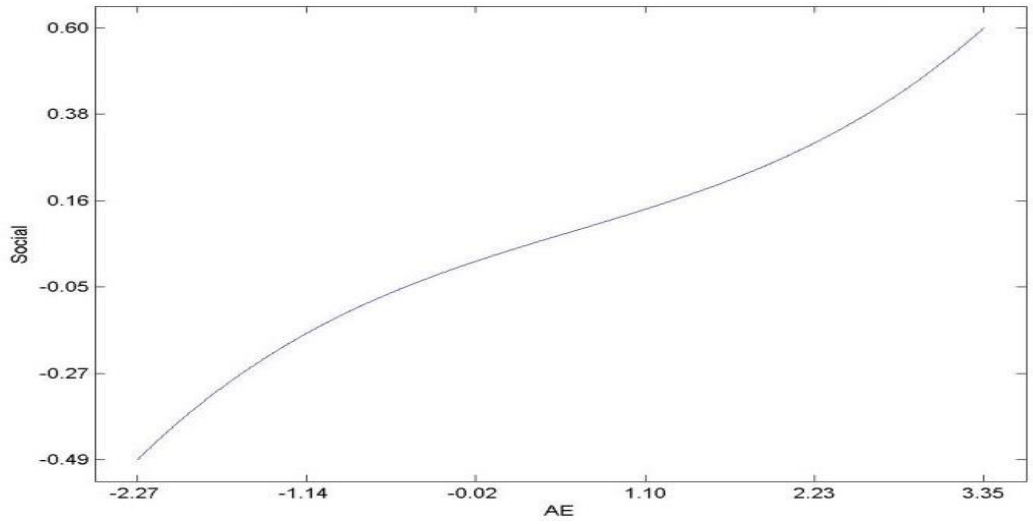

Figure 4.2. AE and SV relationship

Aesthetics also has a positive relationship with emotional value (β=0.6, p_value <.01). The graphical depiction of the relationship is given in figure 4.3 below. The plot depicts more of an upward sloping straight line. The interpretation of betas is as follows: one standard deviation increase in aesthetics leads to a0.6 standard deviation in emotional value.

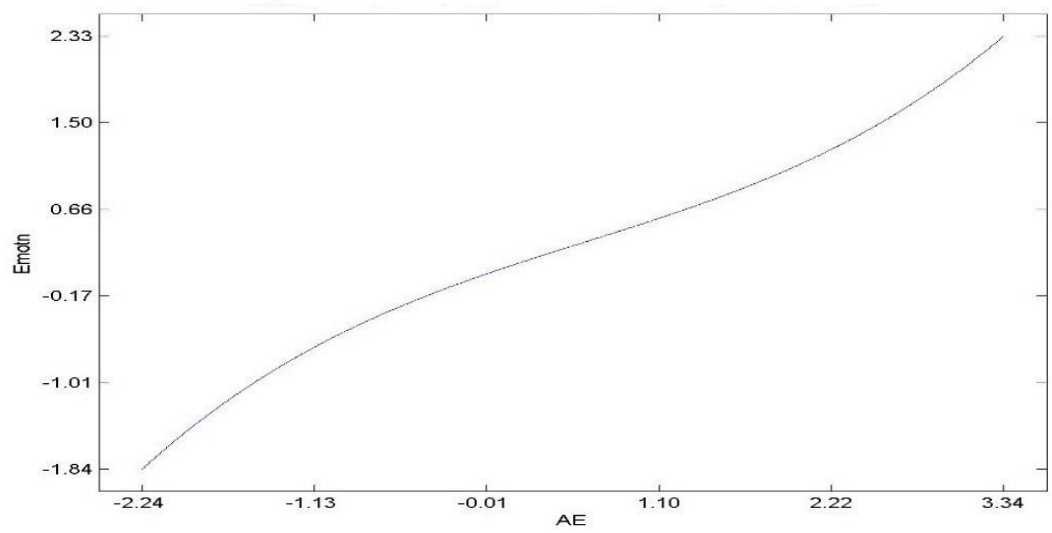

Figure 4.3. AE and EV relationship

Regarding the relationship between social value and purchase intention and emotional value and purchase intention, the associations are illustrated in figures 4.4 and 4.5. Both emotional and social value have a positive and significant relationship with purchase intention. The estimated coefficient for social value (β=0.7, p-value< .01) is larger in magnitude when compared to emotional value (β=0.4, p-value <.01). This indicates that a stronger effect on purchase intention originates from social value. In both plots, the curves depict more of an upward sloping straight line.

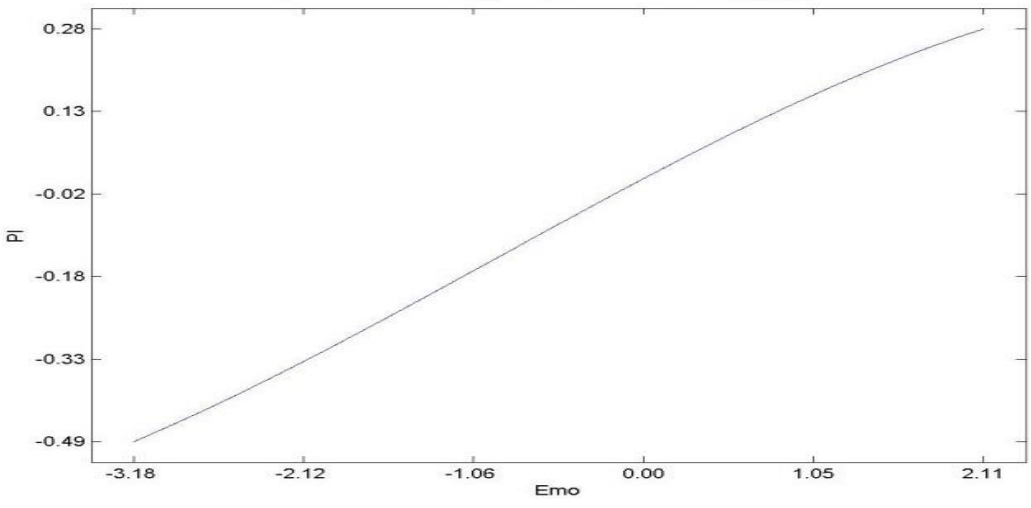

Figure 4.4. EV and PI relationship

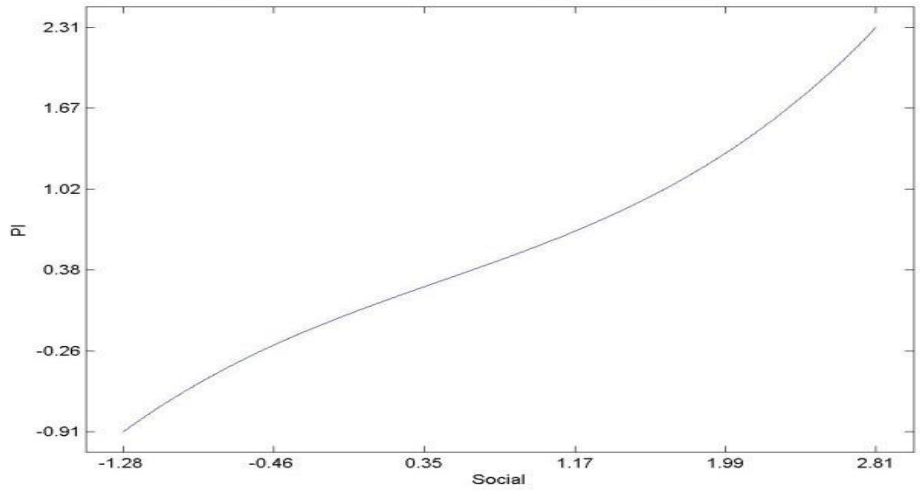

Figure 4.5. SV and PI relationship

4.3. Summary

The second part of the data analysis was related to the usage of PLS. This analysis was carried out in two phases. In the first step, the measurement model was assessed for construct reliability and validity. Also, factor loadings were measured in order to test the individual item reliability. Results indicated that all constructs were reliable.

Further, in order to confirm the validity of each construct, Convergent, Composite Reliability and AVE and discriminant validity were also computed. Upon confirming the validity and reliability of construct, the constructs were eligible for use in the next stage to test the hypotheses. The hypothesised structural model was examined in the second stage, including seven paths representing the hypotheses (H_1, H_2, H_3, and H4).Two hypotheses were found not significant on the proposed path. The next chapter explains the results obtained in this chapter, in order to answer the research questions outlined in Chapter 1.

Chapter 5

Conclusions, implications and research contributions

5.1. Overview

This study addressed the research problem: How does aesthetics influence consumer purchase intention? This chapter reports the findings and discusses the implications arising from them. The findings are compared and contrasted with those from the literature to highlight similarities and differences (section 5.2.).This is followed by a discussion of the contributions made by this study (section 5.3.) and the limitations of the research (section 5.4.). Finally, recommendations are made for further research (section 5.5.).

5.2. Summary of findings

This section summarizes the findings of this thesis (table 5.1) and discusses the results of the quantitative analyses, as reported in Chapter 4, within the context of prior studies as examined in Chapter 2 of this study. It does this by discussing and answering the seven research questions proposed in Chapter 2.

Table 5.1. Summary of findings and conclusions

Research Issues and Hypotheses	Hypotheses	Findings of this study
R1. What are the attributes of aesthetics?		Aesthetics is made of four attributes instead of the three confirmed by Swilley (2012).
R2. How does aesthetics influence purchase intention?		
R2.1. Does aesthetic appreciation of a smartphone have a direct link with purchase intention?	Aesthetics has a positive and direct impact on purchase intention.	Hypothesis accepted but AE could explain only 10% of variance in purchase intention.
R2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via functional value?	Functional value is a mediator between aesthetics and purchase intention	Hypothesis rejected
R2.3. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via social value?	Social value is a mediator between aesthetics and purchase intention	Hypothesis accepted- AE could explain 70 % of the variance in PI when SV acts as a mediator.
R2.4. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via emotional value?	Emotional value is a mediator between aesthetics and purchase intention	Hypothesis accepted. AE could explain 40% of variance in purchase intention when EV acts as a mediator.

5.2.1. Research issue 1: What are the attributes of aesthetics?

One of the purposes of this study was to establish and develop measures for aesthetics of smartphones based on appropriate scale development procedures and supported by quantitative analysis. The results show that these measures can assist development of theoretical and managerial knowledge.

Two main conclusions can be drawn from the findings of the study. The first conclusion relates to new findings about the factors contributing to aesthetics. Unlike previous measure of aesthetics, the aesthetics' construct captures physical dimensions pertaining to a wider range of senses than previous studies. This mixture of different elements allows for a deeper understanding of individuals' perceptions of design, shape, colour and touch as determinants of aesthetics. Although Swilley (2012) found beauty as a construct of aesthetics, the findings of the research did not confirm it as a determinant of aesthetics (See sub-section 4.2.1.1). However, I cannot conclude that individuals do not appreciate beauty. Participants may perceive beauty as "an aesthetic representation which involves pure physicality" (Vacker & Key 1993, p. 486) and thus, they might think the definition of beauty equates to aesthetics.

A second conclusion relates to the weight of each latent factor that contributes to the aesthetic factor. The result of this study supports previous findings that design has the highest weight in forming aesthetics (.41), followed by shape (.39), touch (.36) and colour (.23). The finding is in line with Brunner, Emery and Hall's (2008) study that design is increasingly becoming an important strategic tool and a success factor for firms offering personalised consumer durables. The study also supports earlier research findings that shape is an important determinant of aesthetics and can become a competitive advantage for a product where its shape follows social trends (Berkowitz 1987; Schmitt & Simonson 1997), for instance, one trend is towards rectangular shapes, nowadays. Therefore, Apple has spent millions of dollars to claim proprietary rights to the rectangular shape of its electronic devices in order to make them distinctive and distinguishable from other companies' products (Raustiala & Sprigman 2012).

Support for touch as a determinant also confirms findings by Ernst and Banks (2002) that tactile information can be used as a criterion to distinguish between stimuli when tactile information is used in association with visual exploration. The finding that aesthetics is affected by tactile information and that touch can influence aesthetics appreciation more than the visual input, such as shape or colour (Jansson-Boyd & Marlow 2007), is also confirmed for smartphones and possibly for other devices increasingly requiring touch in order to be used.

Colour is the next important attribute of aesthetics. The result supported Veryzer and Hutchinson‘s (1998) finding that, as part of a product’s attributes (Kerfoot, Davies & Ward 2003), colour can impact an aesthetic response. It attracts consumers to products and increases sales (Grossman & Wisenblit 1999). Nowadays, smartphone companies pursue various colours for their smartphones (Research and Markets 2005). Investigation of consumers’ intention to purchase smartphones based on the scale used in this study may better assist in understanding the role of colour.

5.2.2. Research Issue 2: How does aesthetics influence purchase intention?

The second research issue concerns the impact of aesthetics on purchase intention. In order to understand the nature of the relationship, this research issue is divided into five different sub-categories.

5.2.2.1. Does aesthetic appreciation of smartphones have a direct link with purchase intention?

The finding of this study suggests that aesthetics has a weak impact on purchase intention. Although my expectation was that respondents might be significantly affected by aesthetics and previous studies have found a strong effect of aesthetics on user preference (Hall & Hanna 2004; Hassenzahl 2004; Schenkman & Jönsson 2000; Yamamoto & Lambert 1994; Lee & Koubek 2010; and Tzou & Lu 2009), the coefficient determinant of purchase intention (R^2) is low. Aesthetics could explain only 10% (R^2= 0.10) of variance in purchase intention which means that aesthetics did not have a strong direct effect on purchase intention.

As mentioned in the literature review, a favorable intention does not always lead to action. The findings of this study tended to support the view that beliefs about a thing may not always lead to behavioural intention and can be mediated by social pressure to engage or not engage in a behaviour (Fishbein & Ajzen 2010).

5.2.2.2. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention through different dimensions of perceived value?

Literature specifically addressing how perceived value influences purchase intention is very limited. This study examined whether there was an indirect link between aesthetic appreciation of a smartphone, its dimensions of perceived value and purchase intention.

The conclusions drawn from focusing on the components of perceived value-purchase intention path are also a contribution of this study.

5.2.2.3. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via functional value?

Functional value as a component of perceived value was used as a mediator between aesthetics and purchase intention in order to improve the quality of the link between aesthetics and purchase intention and to evaluate whether participants were driven by the utilitarian value of their smartphone in their intention to purchase. Although other research (Tractinsky, Shoval-Katz & Ilka 2000; Ben-Bassat, Meyer & Tractinsky 2006; Lee & Koubek 2010; De Aneglei, Sutcliffe & Hartman 2006) found a strong interrelationship between aesthetics and perceived functional value, irrespective of purchase intention, our finding shows a positive (β=.3, p-value<.01) but weak relationship (R^2=.08) with aesthetics. For most respondents, an aesthetically pleasing smartphone was not strongly linked to its perceived functional value or the intention to purchase. Such a result confirms Lin and Bhattacherjee's (2010) research that usefulness, as a factor of functional value, is of less importance to a potential consumer when considering what to purchase, when a product is not designed to only improve functional outcomes. Ease of use, as a variable of functional value, is also less important because hedonic features of a product like its

colour, touch, design and layout, are less demanding of technical or specialized skills than understanding the utilitarian technical capabilities of a smartphone.

The growing standardization of technology features in smartphones (Reimann et al. 2010) may be responsible for diminishing the influence of perceived functional value on purchase intention, especially if customers expect the same functionality in any smartphone and thus place more emphasis on other aspects of perceived value. Respondents, of different gender, age categories and educational background, had the same response that functional value did not influence their purchase intention. This finding can remind product and marketing managers to not focus only on the physical attributes of smartphones but on non-utilitarian components of perceived value sought by users.

5.2.2.4. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via social value?

Although the direct relationship between aesthetics and social value was positive (β=0.3), aesthetics could not explain more than 10% of variance in social value. However, social value had a positive and direct relationship with purchase intention (β=0.7), supporting the argument that increasing positive perceived social value can strengthen purchase intention (Vigneron & Johnson 1999; Gill, Byslma & Ouschan 2007). Perceived social value emerges as the most important mediator between aesthetics appreciation of smartphones and purchase intention.This mediation leads to a high R^2 which means that aesthetics could explain about 70% (R^2=.68) of the variance in purchase intention, which is high in the area of consumer behaviour (Hair et al. 2014, p.175; Hair, Ringle & Sarstedt 2011). From a consumer-behaviour perspective, the study also confirms the finding that an individual's selection of products is influenced by their referent groups (Bearden & Etzel 1982).

Interestingly, except for the education category, there was homogeneity in responses with respect to gender and age group differences. Respondents belonging to different demographic categories all perceived social value as important and this importance was linked to purchase intention. The effect of education was more complex. For respondents who had a vocational training and university degree,

social value was an important mediator between aesthetics and purchase intention ($R^2 > 0.5$), whereas this was not the case for individuals with or below diploma level.

Generally, the results are consistent with the theory of reasoned action: If consumers see their referent groups use the smartphones these people like to purchase, they have more intention to buy the same phone. In other words individuals' intention is not driven by the perceived functionality and benefits of performing the behaviour anymore but is influenced by their perceptions about how others would like them to perform the behaviour. Therefore, higher perceived social value can positively influence purchase intention. Family, friends and groups the respondents belonged to were identified as the main sources for information needs. Using smartphones increases social inclusion, connectedness (Mathews 2004) and improves the status of individuals amongst peers (Ozcan & Kocak 2003). Thus, the selection and use of a smartphone has become a form of self-expressive identity within groups, which can influence the mobile phone behaviour of individuals (Mannetti, Pierro & Livi 2002; Walsh & White 2007), becoming a "materialistic representation" of self (Walsh & White, p.9).

5.2.2.5. Does aesthetic appreciation of a smartphone have an indirect link with purchase intention via perceived emotional value?

Another conclusion is related to the role of perceived emotional value in the link between aesthetics and purchase intention. Aesthetics has a positive and strong relationship with perceived emotional value ($\beta=0.6$; $R^2=0.6$), which is a significant mediator between aesthetics and purchase intention. Aesthetics could explain 20% ($R^2=0.2$) of purchase intention when its relationship was mediated by emotional value, which is high for consumer behaviour studies (Hair et al 2014, p.175). The finding reinforces the idea that aesthetics can be used as a competitive advantage for a product by shedding light on the emotional meaning products have for customers and the high value of such emotional connections (Lojacono & Zaccai 2012). It also supports the idea that emotional value can be a strong predictor of purchase intention (Sweeney & Soutar 2001).

Except for education, there was homogeneity among different demographic groups regarding their view of emotional value. Respondents from different age groups, gender and income all emphasized the role of emotional value in their intention to purchase smartphones. People seek out and use material objects which both symbolize their identity and enhances their emotional state (Dittmar 2005; Dittmar, Long & Bond 2007). Consequently, mobile phones have become important parts of their lifestyles (Walsh & White 2006). Accordingly, aesthetics can cause higher levels of positive perception, which may lead to buyers' intention to purchase that product. However, for respondents with an education less than high school level, perceived emotional value was less important.

5.3. Contribution to theory

This study has sought to contribute to the literature on the role of aesthetics in consumer decision making and to better understanding of the links between perceived value and purchase intention.

5.3.1. Aesthetics theory

First, this research provides argument and evidence that aesthetics should be used as a formative factor, a divergence from prior studies. This study viewed aesthetics as a second order factor consisting of different reflective factors. This means aesthetics is defined by its factors such as shape and colour. The definition of aesthetics by users comes from the description of its shape, design, colour and touch. Treating aesthetics as a 1st order reflective factor leads to measurement problems because a first order factor is measurable via items that are all interrelated and measure the same factors, whereas an aesthetically pleasant item is distinguishable from others by using components such as shape and colour that do not share the same indicators. Using aesthetics as a single item will lead to the perception that beauty and aesthetics have the same meaning and are interchangeable. The result of this study also supports the aesthetics of a smartphone as having four different factors: shape, design, colour and touch - not three as Swilley (2012) proposed. Swilley (2012) ignored shape or touch as a measure of aesthetics and considered them as the determinants of overall appearance and not aesthetics. Also, overall

appearance is not defined properly in order to be distinguishable from design and shape and one may argue that design of a product can represent the overall appearance too. In the new framework, however, each factor has a different weight in defining aesthetics and is not similar to the other factors. Touch and shape are as important as colour and design as determinants of aesthetics.

5.3.2. The link from aesthetics to purchase intention

The study shows that multiple value dimensions describe perceived value better than does a single 'value for money' item. The reliability factor, structure and validity test indicate that the 15-item perceived value scale and its three dimensions have sound and stable psychometric properties.

Although the mediating role of perceived value has received little attention from marketing researchers (Kwon, Trail & James 2007), the findings of this study showed that for durable products, perceived value played an important role as a mediator. It fully mediated the relationship between aesthetics and purchase intention. This means that respondents always look for the value they may gain from an aesthetically pleasing product before they intend to purchase.

The scale demonstrates that consumers prefer to choose smartphones based on first, the social outcome of what the product conveys (social value) and second, the enjoyment or pleasure derived from the product (emotional value). The importance of social value on consumer purchase intention is with respect to smartphones, a durable product category normally considered as functionally oriented. This is in contrast with Sweeney and Soutar's (2001) results that emotional value is the most important value.

5.4. Practical Implications

In a country like Australia where the smartphone penetration rate is 67% (International Data Corporation 2013), more than sixty percent of respondents use smartphones to access social networks and about 57% (appendix 5) allocate more than 30 minutes per day for accessing social networks. This shows that customers are more connected to their friends, families and referent groups. Mobile phones provide

constant connection to others, potentially increasing the psychological dependency that people have with their friends and peers (Walsh, White & Young 2009; Wei & Lo 2006).The result is in line with findings of the study that social value plays the most important role in consumer decision making. The shift of promotional and retail sales orientation from functionality of a product to the other dimensions of value could be particularly useful in order to gain a competitive advantage.

Thus, the finding can be helpful for managers of smartphone companies to focus more on the role of referent groups on customer purchase intention, rather than functional value of products. In-group norms may even influence customers to choose a specific smartphone. This offers room for segmentation, i.e., the grouping of customers and objects in terms of the commonalities of their aesthetic experience as well as their differentiation on the same bases. Such conditions show the opportunity for marketers to explore all dimensions of customer value before choosing their own appropriate market approach.

5.5. Limitations of this research

This study only explored the attributes of aesthetics in general and did not examine the types of attributes. For instance, shape can be oval, circular, rectangular, or square. Even design can be different based on the taste of customers. Exploring the dimension of each latent variable of aesthetics appreciation provides useful insights about the attributes of aesthetics.

Another limitation of this study is its self-report nature, especially with reference to the measurement of the aesthetics construct. Respondents were guaranteed the confidentiality of their response and requested to contribute to this study by providing accurate responses. In addition, measures such as the duration of time it took to complete the survey were used to check any response which followed a specific pattern or was completed quicker than average. Although, collecting data online helps to omit the possibility of respondents filling out the questionnaire in a socially desirable manner, I cannot rule out the possibility of bias. Furthermore, the limitation faced by the use of self-reported data needs to be considered.

Lack of generalizability of the findings may be viewed as another weakness. This study was undertaken in Australia and was limited to citizens of Australia. Sections of the Australian population who do not have internet access or did not meet other criteria were excluded. The survey focused on one product type, smartphones. Aesthetic appreciation can involve some or all of the senses, but in the case of smartphones, not all five senses (e.g., smell) will necessarily be used. Similarly, the aesthetic attributes will also be likely to vary between products. Thus, the findings may not hold in different contexts for different products.

While purchase intention can be a good predictor of actual purchase, it cannot guarantee that the actual behaviour will be the same as behavioural intention. Thus, real behaviour may be influenced by many unexpected factors that may impede the actual purchase.

5.6. Further research

The extent to which the findings may be extended to the other related products such as tablets, PC and laptops remains to be explored. With minor modifications to some items, the framework can be adapted to the services sector and nondurable product contexts. The framework thus offers the potential to become widely used to measure the importance of aesthetics on purchase intention in international retailing and service contexts.

The necessity of testing the validity of the study by repeating it in other countries is clear. Further research can be replicated in other countries which are socioeconomically similar to Australia. Furthermore, Australia is an affluent, developed country measuring high in individualism (Hawkins & Mothersbaugh 2010) so that research to test applicability to less developed or developing countries measuring high in collectivism would also be useful.

The subject pool includes Australian adults that owned a smartphone for more than 5 years. This would translate to a better response accuracy expectation from consumers who have a fairly good amount of experience with a smartphone. However, the response accuracy expectation may be further increased by adding as a covariate how recently the respondents have purchased a smartphone. The findings

of the study showed a weak direct relationship between aesthetic appreciation and purchase intention. However, Sevaa and Helander (2009, p.345) demonstrated cultural differences in factors that influence Singaporean and Filipino consumers' purchase intention of a mobile phone. Therefore, it is important to note that the weak relationship between aesthetic appreciation and purchase intention may be accounted for by cultural effects. Further research could examine factors such as cultural effects as a moderator of this relationship.

Another area for the future study would be to analyse the antecedents of aesthetics. Future research could assess what variables play an important part in developing aesthetic appreciation. For example, do people with socio-cultural factors differ in their aesthetic appreciation?

The other fruitful research direction is the study of the role that branding plays in the relationship among aesthetics, perceived value and purchase intention. Customers use brand names as signals of quality and social standing and use brand attributes as their criteria to distinguish products (Walsh, Shiu & Hassan 2014). Future research can investigate whether brand association and involvement can affect the relationship between aesthetics and purchase intention. Also, it should be investigated whether other dimensions of perceived value, including some that are difficult to operationalize-such as ethics and spirituality (Holbrook 1999), could mediate the relationship. It is also important to continue to examine the role of economic value on the relationship between aesthetics and purchase intention. It would be interesting to view whether price can be an important determinant of purchase intention.

There is a concern that the experience of a previous purchase influences future perceptions. Current results might be influenced by previous experiences of respondents with the same product type (the repurchase of smartphone). Thus, there is a need to carry out longitudinal research studies using the same variables, measuring instruments and research methods. Longitudinal research would provide confidence in the findings suggested by the study. For example, longitudinal research designs could be employed to investigate the impact of aesthetics appreciation before and after actual purchase. Such a research design may produce

further insights into the effects of the dimensions of perceived value as moderators in the association between aesthetics and purchase intention.

References

Aaker, DA, Kumar, V, Day, GS, & Leone, RP 2010, *Marketing Research,* 10th edn, John Wiley & Sons, Danvers, MA.

Abraham, C & Sheeran, P 2003, 'Acting on intentions: the role of anticipated regret', *British Journal of Social Psychology*, vol.42, no.4, pp.495-511.

Agarwal, S & Teas, RK 2001, 'Perceived value: mediating role of perceived risk', *Journal of Marketing Theory and Practice*, vol.9, no.4, pp. 1–14.

Agarwal, S & Teas, RK 2004, 'Cross-national applicability of a perceived risk-value model', *Journal of Product and Brand Management*, vol. 13, no.4, pp. 242–56.

Ajzen, I 1991, 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes*, vol. 50, pp.179–211.

Ajzen, I. 2001, 'Nature and operation of attitudes', *Annual review of psychology*, vol.52, no.1, pp.27-58.

Ajzen, I 2008, 'Consumer attitudes and behaviour', in PC Haugtvedt, PM Herr & FR Cardes (eds.), *Handbook of Consumer Psychology*, Academic Press, New York, NY, pp. 525-48.

Ajzen, I & Cote, NG 2008, 'Attitudes and the prediction of behaviour', in WD Crano & R Prislin (eds.), *Attitudes and attitude change*, Psychology Press, New York, NY, pp. 289–311.

Ajzen, I & Fishbein, M 1970, 'The prediction of behavior from attitudinal and normative variables', *Journal of Experimental Social Psychology*, vol. 6, pp. 466–87.

Ajzen, I & Fishbein, M 1972, 'Attitudes and normative beliefs as factors influencing behavioral intentions', *Journal of Personality and Social Psychology*, vol.21, pp. 1–9.

Ajzen, I & Fishbein, M 1980, *Understanding attitudes and predicting social, behaviour*, Prentice-Hall, Englewood Cliffs, NJ.

Ajzen, I. & Fishbein, M 2005. 'The Influence of Attitudes on Behavior', in D Albarracín, BT Johnson & MP Zanna (eds.), *The Handbook of Attitudes*, Mahwah, Erlbaum, NJ, pp. 173-221.

Alan, C 1997, *Studying your workforce: applied research methods and tools for the training and development practitioner*, Sage, Thousand Oaks, CA.

Albrecht, TL, Johnson, GM & Walther, JB 1993, 'Understanding communications processes in focus groups', in DL Morgan, ed., *Successful Focus Groups: Advancing the State of the Art*, Sage, Newbury Park, CA.

Allen, MW, Gupta, R & Monnier, A 2008, 'The interactive effect of cultural symbols and human values on taste evaluation', *Journal of Consumer Research*, vol.35, no.2, pp.294–308.

Andreassen, TW & Lindestad, B 1998, 'Customer loyalty and complex services', *International Journal of Service Industry Management*, vol. 9, no.1, pp. 7–23.

Andersson, LM & Bateman, TS 1997, 'Cynicism in the workplace: Some causes and effects', *Journal of Organizational Behavior*, vol.18, no.5, pp.449– 69.

Andrews, L & Bianchi, C 2013, 'Consumer internet purchasing behaviour in Chile', *Journal of Business Research*, vol.66, no.10, pp. 1791-1799.

AR, AA 2012, 'Effect of perceived values on the brand preference and the purchase intention', *European Scientific Journal*, vol. 8, no.17.

Armitage, CJ, & Conner, M 2001, 'Efficacy of the theory of planned behaviour: a meta-analytic review', *British journal of social psychology*, vol.40, no.4, pp.471-99.

Arnheim, R 1992, 'But is it science?', in G Cupchik & J Laszlo, (eds.), *Emerging Visions of the Aesthetic Process: Psychology, Semiology, and Philosophy*, Cambridge University Press, Cambridge.

Arvola, A, Lähteenmäki, L & Tuorila, H 1999, 'Predicting the intent to purchase unfamiliar and familiar cheeses: the effects of attitudes, expected liking and food neophobia', *Appetite*, vol.32, no.1, pp.113-126.

Aslam, MM 2006, 'Are you selling the right colour? A cross-cultural review of colour as a marketing cue', *Journal of Marketing Communications*, vol.12, no.1, pp.15-30.

Australian Communications and Media Authority 2011, *Communications Report,2010–11 series. Report 2 - Converging communications channels: Preferences and behaviours of Australian communications users*, viewed 31 March 2013, http://www.acma.gov.au/webwr/_assets/main/lib410148/report 2convergent_comms.pdf.

Aylesworth, G 2005, *Postmodernism*, Stanford Encyclopedia of Philosophy, viewed 23 Nov 2014, http://plato.stanford.edu/entries/postmodernism/.

Baker, TL 1994, *Doing Social Research*, 2nd edn, McGraw Hill , New York, NY.

Babin, BJ, Darden, WR & Griffin, M 1994, 'Work and/or fun: measuring hedonic and utilitarian shopping', *Journal of Consumer Research*, vol. 20, no. 4, pp. 644–56.

Babin, BJ, Hair, JF & Boles, JS 2008, 'Publishing research in marketing journals using structural equations modelling', *Journal of Marketing Theory and Practice*, vol.16, no.4, pp. 279–285.

Bagozzi, RP 1983, 'A holistic methodology for modeling consumer response to innovation', *Operations Research*, vol.31, no.1, pp. 128–76.

Bagozzi, RP, Baumgartner, H & Pieters, R 1998, 'Goal-directed emotions,' *Cognition and Emotion*, vol.12, no.1, pp.1- 26.

Bailey, JE & Pearson, SW 1983, 'Development of a tool for measuring and analysing computer user satisfaction', *Management Science*, vol. 29, pp.530–45.

Baisya, K & Das, GG 2008, *Aesthetics in Marketing*, Sage, New Delhi, India.

Balakrishnan, V & Raj, RG 2012, 'Exploring the relationship between urbanized Malaysian youth and their mobile phones: A quantitative approach', *Telematics and Informatics*, vol. 29, no. 3, pp. 263-72.

Barnett, J 1998, 'Sensitive questions and response effects: an evaluation', *Journal of Managerial Psychology*, vol. 13, no.1/2, pp. 63-76.

Barroso, C, Carrión, GC & Roldán, JL 2010, 'Applying maximum likelihood and PLS on different sample sizes: studies on SERVQUAL model and employee behavior model', in VE Vinzi, WW Chin , J Henseler & H Wang, *Handbook of partial least squares*, Springer, Heidelberg, Berlin, pp. 427-47.

Batra, R & Ahtola, OT 1991, 'Measuring the hedonic and utilitarian sources of consumer attitudes', *Marketing Letters*, vol. 2, no. 2, pp. 159-70.

Bearden, WO & Etzel, MJ 1982, 'Reference group influence on product and brand purchase decisions', *Journal of consumer research*, vol.9, no.2, pp.183-94.

Bearden, WO, Netemeyer, RG & Teel, JE 1989, 'Measurement of consumer susceptibility to interpersonal influence', *Journal of Consumer Research*, vol.15, no.4, pp.473-81.

Beardsley, MC 1969, 'Aesthetic experienced regained', *Journal of Aesthetics and Art Criticism*, vol.28, no.1, pp. 3-11.

Beardsley, MC 1981, *Aesthetics: problems in the philosophy of criticism*, 2nd edn, Hacket, Indianapolis, IN.

Bell, SS, Holbrook MB & Solomon, MR 1991, 'Combining esthetic and social value to explain preferences for product styles with the incorporation of personality and ensemble effect', *Journal of Social Behaviour and Personality*, vol. 6, no.6, pp.243-73.

Bellenger, DN, Steinberg, E & Stanton, WS 1976, 'Congruence of Store Image and Self Image', *Journal of Retailing*, vol. 52 (Spring), pp.17-32.

Ben-Bassat, T, Meyer, J & Tractinsky, N 2006, 'Economic and subjective measures of the Perceived Value of Aesthetics and usability', ACM *Transactions on Computer–Human Interaction*, vol.13, no.2, pp.210–34.

Bennett, DA 2001, 'How can I deal with missing data in my study?', *Australian and New Zealand Journal of Public Health*, vol.25, pp.464 – 69.

Berkowitz, M 1987, 'Product shape as a design innovation strategy', *Journal of Product Innovation Management*, vol. 4, no. 4, pp. 274-83.

Berlyne, DE 1974, 'The new experimental aesthetics', in DE Berlyne (ed.), *Studies in the new experimental aesthetics: steps toward an objective psychology of aesthetic appreciation*, Washington Hemisphere Pub, Washington, DC.

Berlyne, DE 1971, *Aesthetics and psychobiology*, Appleton-Century-Crofts, New York, NY.

Bhaskaran, S & Sukumaran, N 2007, 'Contextual and methodological issues in COO studies', *Marketing Intelligence & Planning*, vol. 25, no.1, pp. 66–81.

Bitner, MJ 1992, 'Servicescapes: the impact of physical surroundings on customers and employees', *Journal of Marketing*, vol.56, no.2, pp. 57–71.

Blackburn, S 1994, *Dictionary of philosophy*, Oxford University Press, Oxford.

Bloch, PH 1995, 'Seeking the ideal form: product design and consumer response', *Journal of Marketing*, vol. 59, pp. 16-29.

Bloch, PH., Brunel, FB & Arnold, TJ 2003, 'Individual differences in the centrality of visual product aesthetics: concept and measurement', *Journal of Consumer Research*, vol. 29, no. 4, pp.551-65.

Bloom, N 1989, 'Have discussion groups had their day?', *Industrial Marketing Digest*, vol. 14, no. 2, pp. 147-53.

Bloor, M, Frankland, J, Thomas, M & Robson, K 2001. *Focus groups in social research*, Sage, London.

Boksberger, PE & Melsen, L 2011, 'Perceived value: a critical examination of definitions, concepts and measures for the service industry', *Journal of Services Marketing*, vol. 25, no.3, pp. 229-40.

Bollen, KA 1989, *Structural equations with latent variables*, Wiley, New York, NY.

Boselie, F 1992, 'The golden section has no special aesthetic attractivity',*Empirical Studies of the Arts*, vol.10, no. 1, pp.1-18.

Bosmans, A 2006, 'Scents and sensibility: when do (in) congruent ambient scents influence product evaluations?', *Journal of Marketing*, vol.70, no.3, pp.32–43.

Bouchet, D 1994, 'Rails without ties: The social imaginary and postmodern culture — can postmodern consumption replace modern questioning?', *International Journal of Research in Marketing*, vol.11, pp. 405-22.

Boztepe, S 2007, 'User value: competing theories and models', *International Journal of Design*, vol.1, no.2, pp. 55-63.

Bredahl, L 2001, 'Determinants of consumer attitudes and purchase intentions with regard to genetically modified food – results of a crross-national survey', *Journal of Consumer Policy*, vol.24, no.1, pp.23-61.

Brennan, M & Hoek, J 1992, 'The behavior of respondents, nonrespondents and refusers across mail surveys', *Public Opinion Quarterly*, vol.56, no.4, pp.530-5.

Brown, S & Patterson, A (eds.) 2000, *Imagining marketing: art, aesthetics and the avant-garde*, Routledge, London.

Brown, S, Hirschman EC & Maclaran, P 2000, 'Presenting the past: on marketing's re-production orientation', in *Imagining marketing: art, aesthetics and the avant garde*, Routledge, London, pp 145-191.

Bruhn, M, Georgi, D & Hadwich, K 2008. 'Customer equity management as formative second-order construct', *Journal of Business Research*, vol. 61, no.12, pp. 1292-1301.

Brunel, F & Swain, SD 2007, 'A moderated perceptual model of product aesthetic evaluations', Proceedings of the European Conference of the Association for Consumer Research, *European Advances in Consumer Research*, vol. 8, p.445, viewed 20 May 2013, Academic OneFile database.

Brunner, R, Emery, S & Hall, R 2008, *Do you matter? How great design will make people love your company*, FT Press, New York, NY.

Burnett, MS & Lunsford, DA 1994, 'Conceptualizing guilt in the consumer decision - making process', *Journal of Consumer Marketing*, vol.11, pp.33–43.

Burns, C 1989, 'Individual interviews', in S Robson & A Foster (eds), *Qualitative research in action*, Hodder and Stoughton, London, pp. 47-57.

Callarisa Fiol, LJ, Moliner Tena, MA & García, JS 2011, 'Multidimensional perspective of perceived value in industrial clusters', *Journal of Business and Industrial Marketing*, vol.26, no.2, pp.132-45.

Callarisa Fiol, LJ, Bigne Alcaniz, E, Moliner Tena, MA & García, JS 2009, 'Customer loyalty in clusters: perceived value and satisfaction as antecedents', *Journal of Business-to-Business Marketing*, vol.16, no.3, pp. 276-316.

Callegaro, M & DiSogra, C 2008, 'Computing response metrics for online panels', *Public Opinion Quarterly*, vol.72, no.5, pp.1008-32.

Celsi, RL & Olson, JC 1988, 'The role of involvement in attention and comprehension processes', *Journal of Consumer Research*, vol.15, pp. 210-24.

Chaiken, Shelly & Maheswaran D. 1994, 'Heuristic processing: can bias systematic processing: effects of source credibility, argument ambiguity, and task importance on attitude judgment', *Journal of Personality and Social Psychology*, vol. 66, no. 3, pp.460–73.

Chakrapani, C 2007, 'On the validity of online panels', *Canadian Journal of Marketing Research*, vol. 24, no.1, pp. 7-15.

Chandran, S & Morwitz, VG 2005, 'Effects of participative pricing on consumers' cognitions and actions: A goal theoretic perspective', *Journal of Consumer Research*, vol.32, no.2, pp.249-59.

Charters, S 2006, 'Aesthetic products and aesthetic consumption: a review', *Consumption Market and Culture*, vol.9, no.3, pp.235-55.

Chen, CF 2008, 'Investigating structural relationships between service quality, perceived value, satisfaction, and behavioral intentions for air passengers: evidence from Taiwan', *Transportation Research Part A*, vol.42, no.4, pp.709-17.

Chen, PT & Hu, HH 2010, 'The effect of relational benefits on perceived value in relation to customer loyalty: an empirical study in the Australian coffee outlets industry', *International journal of hospitality management*, vol. 29, no.3, pp.405-12.

Chi, T & Kilduff, PP 2011, 'Understanding consumer perceived value of casual sportswear: an empirical study', *Journal of Retailing and Consumer Services*, vol. 18, no.5, pp.422-9.

Child, IL 1964, 'Observations on the meaning of some measures of esthetic sensitivity', *Journal of Psychology*, vol.57, no.1, pp. 49–64.

Chin, WW 1998, 'The partial least squares approach to structural equation modelling', *Modern Methods for Business Research*, vol.295, no.2, pp.295-336.

Chin, WW 2010, 'How to write up and report PLS analyses', in VE Vinzi, WW Chin, J Henseler & H Wang (ed.), *Handbook of partial least squares: concepts, methods and applications in marketing and related fields*, Springer, Berlin, pp. 655–690.

Chitturi, R, Rajagopal, R & Vijay, M 2007, 'Form versus function: how the intensities of specific emotions evoked in functional versus hedonic trade-offs mediate product preferences', *Journal of Marketing Research*, vol. 44 (November), pp. 702–14.

Cho, MH & Jang, SS 2008, 'Information value structure for vacation travel', *Journal of Travel Research*, vol.47, no.1, pp.72-83.

Crilly, N, Moultrie, J & Clarkson, PJ 2004, 'Seeing things: consumer response to the visual domain in product design', Design studies, vol. 25, no.6, pp. 547-77.

Coates, D 2003, *Watches tell more than time: product design, information, and the quest for elegance,* McGraw Hill, New York, NY.

Collier, E & Bienstock, CC 2007, 'An analysis of how nonresponse error is assessed in academic marketing research', *Marketing Theory,* vol.7, no.2, pp.163-83.

Cohen, JA 1992, 'Power prime', *Psychological Bulletin*, vol.112, pp.155–9.

Cook, C, Heath, F & Thompson, RL 2000, 'A Meta-analysis of response rates in web or internet-based surveys', *Educational and Psychological Measuremen*t, vol.60, no.6, pp: 821-26.

Cooper, DE, Lamarque, P & Sartwell, C (eds.), 1997, *Aesthetics: the classic readings*, Blackwell Publishers, Cambridge, MA.

Cooper, DR & Schindler, PS 2014, *Business research methods,* 12th edn, McGraw-Hill, New York, NY.

Cote, JA & Buckley, MR 1988, 'Measurement error and theory testing in consumer research: an illustration of the importance of construct validation', *Journal of Consumer Research*, vol.14 (March), pp. 579-82.

Cova, B & Svanfeldt, C 1993, 'Societal innovations and the postmodern aestheticization of everyday life', *International Journal of Research in Marketing*, vol.10, pp.297-310.

Cox, D & Cox, AD 2002, 'Beyond first impressions: the effects of repeated exposure on consumer liking of visually complex and simple product designs', *Journal of the American Marketing Society*, vol.30, no.2, pp.119-30.

Crano, WD & Prislin, R 2006, 'Attitudes and persuasion', *Annual Review of Psychology*, vol.57, pp. 345–74.

Creswell, JW 2012, *Educational research: planning, conducting, and evaluating quantitative and qualitative research,* 4th edn, Pearson, Boston.

Creswell, JW & Plano Clark, VL 2007, *Designing and conducting mixed methods research,* Sage, Thousand Oaks, CA.

Creusen, MEH & Schoormans, JPL 2005, 'The different roles of product appearance in consumer choice', *Journal of Product Innovative Management*, vol. 22, no.1, pp.63-81.

Cronin, JJ, Brady, MK & Hult, GTM. 2000, 'Assessing the effects of quality, value, and customer satisfaction on consumer Al intentions in service environments', *Journal of Retailing*, vol. 76, no.2, pp.193–218.

Csikszentmihalyi, M & Robinson, RE 1990, *The art of seeing*, Malibu, Paul Getty Museum, Malibu.

Cyr, D, Head, M & Ivanov, A 2006, 'Design aesthetics leading to m-loyalty in mobile commerce', *Information & Management*, vol.43, no.8, pp. 950-63.

Dalke, H, Little, J, Niemann, E, Camgoz, N, Steadman, G, Hill, S & Stott, L 2006, 'Colour and lighting in hospital design', *Optics & Laser Technology*, vol.38, *no.*4, pp.343-65.

David, M & Sutton, C 2004, *Social Research: The Basics*, Sage, London.

Davis, FD 1989, 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', *MIS Quarterly,* vol.13, pp. 319-40.

Dawes, JG 2002, 'Five point vs eleven point scales: does it make a difference to data characteristics?', *Australasian Journal of Market Research*, vol.10, no.1, pp. 39–47.

Dawes, JG 2008, 'Do data characteristics change according to the number of scale points used? An experiment using 5-point, 7-point and 10-point scales', *International Journal of Market Research*, vol. 50, pp. 61–77.

Day, GS 1970, *Buyer attitudes and brand choice behavior*, Free Press, New York, NY.

de Angeli, A, Sutcliffe, A, Hartmann, J 2006, 'Interaction, usability and aesthetics: what influences users' preferences?', proceedings of the 6th ACM Conference on Designing Interactive Systems, ACM, pp. 271-280, ACM Digital Library.

de Ruyter, K, Wetzels, M, Lemmink, J & Mattsson, J 1997, 'The Dynamics of the service delivery process: a value-based approach', *International Journal of Research in Marketing*, vol.14, no.3, pp. 231–43.

de Vaus, PD 2002, *Analyzing Social Science Data: 50 Key Problems in Data Analysis*, Sage, London

de Vaus, DA 1993, *Surveys in social research*, 3rd edn, UCL Press, London.

Department of State and Regional Development 2009, viewed 04 July 2014, http://www.business.nsw.gov.au/aboutnsw/infrastructure/D10_internetusers_aust.htms.

Dhar, R & Wertenbroch, K 2000, 'Consumer choice between hedonic and utilitarian goods', *Journal of Marketing Research*, vol. 37, no.1, pp.60–71.

Diamantopoulos, A 2006, 'The error term in formative measurement models: interpretations and modelling implications', *Journal of Modelling in Management*, vol.1, no.1, pp. 7–17.

Diamantopoulos, A, Riefler, P & Roth, KP 2008, 'Advancing formative measurement models', *Journal of Business Research*, vol. 61, no.12, pp.1203-18.

Dickie, GL 1971, *Aesthetics: an introduction, traditions in philosophy*, Pegasus, New York, NY.

Dickie, GL 1997, *Introduction to aesthetics: an analytic approach*, Oxford University Press, Oxford.

Dickie, GL 2000, 'Art and value', *British Journal of Aesthetics*, vol.40, no. 2, pp. 228–41.

Dittmar, H 2005, 'A new look at compulsive buying: self-discrepancies and materialistic values as predictors of compulsive buying tendency', *Journal of Social and Clinical Psychology*, vol.24, no.6, pp.832–59.

Dittmar, H, Long, K & Bond, R. 2007, 'When a better self is only a button click away: associations between materialistic values, emotional and identity related buying motives and compulsive buying tendency online', *Journal of Social and Clinical Psychology*, vol. 26, no. 3, pp.334–61.

Dodds, WB 1991, 'In search of value: how price and store name information influence buyers' product perceptions', *Journal of Services Marketing*, vol. 5, no.3, pp. 27–36.

Dodds, WB & College, FL 1995, 'Market cues affect on consumers product evaluations', *Journal of Marketing Theory and Practice*, vol. 3, no.2, pp.50–63.

Dodds, WB & Monroe, KB 1985, 'The effect of brand and price information on subjetive product evaluations', *Advances in Consumer Research*, vol.12, no.1, pp. 85–90.

Dodds, WB, Monroe, KB & Grewal, D 1991, 'Effects of price, brand, and store information on buyers' product evaluations', *Journal of Marketing Research*, vol.28, no.3, pp. 307–19.

Douglas, M 1982, *In the active voice*, Routledge and Kegan Paul, London.

Dwivedi, DK, Kumar, A, Mishra, VK & Dwivedi, S 2012, 'Phenotypic correlation and path coefficient analysis in rice (Oryza sativaL.) introgression lines under drought and controlled conditions', *International Journal of Current Research*, vol.4, pp. 7-12.

Eagly, AH & Chaiken, S 1993. *The psychology of attitudes*, Harcourt Brace Jovanovich College Publishers.

Edson Escalas, J & Bettman JR 2003, 'You are what they eat: the infulence of reference groups on consumers' connections to brands', *Journal of Consumer Psychology*, vol.13, no. 3, pp. 339-48.

Edwards, JR & Bagozzi, RP 2000, 'On the nature and direction of the relationship between constructs and measures', *Psychological Methods*, vol.5, pp.155-74.

Efron, B & Gong, G 1983, 'A Leisurely look at the bootstrap, the jackknife, and cross-validation', *The American Statistician,* vol.37, no.1**,** pp. 36-48.

Eggert, A, Ulaga, W, & Schultz, F 2006, 'Value creation in the relationship life cycle: a quasi-longitudinal analysis', *Industrial Marketing Management,* vol. 35, no.1, pp. 20-27.

Ernst, MO & Banks, MS 2002, 'Humans integrate visual and haptic information in a statistically optimal fashion', *Nature,* vol.41, no.5, pp. 429–433.

Eroglu, S 1992,'The Internationalization Process of Franchise Systems: A Conceptual Model', *International Marketing Review,* vol. 9, no.5, pp.19-33.

Evans, J & Mathur, A 2005, 'The Value of internet surveys: the future is now', *Internet Research,* vol.15, no.2, pp.195-219.

Fan, X, & Wang, L 1996, 'Comparability of jackknife and bootstrap results: An investigation for a case of canonical correlation analysis ', *Journal of Experimental Education,* vol. 64, pp.173-189.

Fenner, DEW 2003, 'Aesthetic experience and aesthetic analysis', *Journal of aesthetic education,* vol. 37, no. 1, pp. 40-53.

Field, AP 2013, *Discovering statistics using IBM SPSS statistics: and sex and drugs and rock 'n' roll,* 4th edn, Sage, London.

Fink, A & Kosecoff, J 1985, *How to conduct surveys a step-by-step guide,* Sage Beverly Hills, CA.

Firat, AF & Venkatesh A, 1995, 'Liberatory postmodernism and the reenchantment of consumption', *Journal of Consumer Research,* vol.22, no.3, pp. 239-67.

Fishbein, M & Ajzen, I 1975, *Belief, attitude, intention and behavior: an introduction to theory and research,* Addison-Wesley, Reading, MA.

Fishbein, M & Ajzen, I 2010. *Predicting and changing behavior: the reasoned action approach,* Psychology Press, New York, NY.

Fornell, C & Larcker, DF 1981, 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of Marketing Research,* vol.18, pp.39–50.

Friborg, O, Martinussen, M & Rosenvinge, JH 2006, 'Likert-based vs. semantic differential-based scorings of positive psychological constructs: a psychometric comparison of two versions of a scale measuring resilience', *Personality and Individual Differences,* vol. 40, pp. 873–84.

Fricker, RD & Schonlau, MS 2002, 'Advantages and disadvantages of internet research surveys: evidence from the literature', *Field Methods,* vol.14, no. 4, pp. 347–67.

Funch, BS 1997, *The Psychology of art appreciation*, Museum Tusculanum Press, Copenhagen.

Gale, G 1975, 'Are some aesthetic judgments empirically true?', *American Philosophical Quarterly*,vol.12, no.4, pp. 341-8.

Gallarza , MG & Gil, Saura, I 2006, 'Value dimensions, perceived value, satisfaction and loyalty: an investigation of university students' travel behaviour', *Tourism Management*, vol.27, no.3, pp.437-452.

Gefen, D, Straub, D & Boudreau, MC 2000, 'Structural equation modelling and regression: guideline for research practice', *Communications of the Association for Information Systems*, vol. 4, no.1, pp.1–70.

Geisser, S 1975, 'The Predictive sample reuse method with applications', *Journal of the American Statistical Association*, vol.70, no. 350, pp.320–8.

Gerrard, M, Gibbons, FX, Reis-Bergan, M, Trudeau, L, Vande Lune, LS & Buunk, B 2002, 'Inhibitory effects of drinker and nondrinker prototypes on adolescent alcohol consumption', *Health Psychology*, vol. 21, pp.601-09.

Gibbons, FX, Gerrard, M, Blanton, H, & Russell, DW 1998, 'Reasoned action and social reaction: willingness and intention as independent predictors of health risk', *Journal of Personality and Social Psychology*, vol.74, pp.1164–81.

Gibbons, FX, Gerrard, M, Vande Lune LS, Wills TA, Brody G & Conger, RD 2004, 'Context and cognition: environmental risk, social influence, and adolescent substance use ', *Personality and Social Psychology Bulletin*, vol.30, pp. 1048–61.

Gilbert, D, Fiske, ST & Lindzey, G (eds.) 1998, *The Handbook of social psychology*, 5th edn, John Wiley & Sons, New Jersey.

Gill, D, Byslma, B & Ouschan, R 2007, 'Customer Perceived Value in a cellar door visit: the impact on behavioural intentions, *International Journal of Wine Business Research*, vol.19, no.4, pp. 257–75.

Glesne, C & Alan, P 1992, *Becoming qualitative researchers: An introduction*, Longman, White Plains, NY.

Goetz, KO, Borisy, AR, Lynn, R & Eysenck, HJ 1979, 'A new visual aesthetic sensitivity test: I. Construction and psychometric properties', *Perceptual & Motor Skills*, vol.49, no.3, pp.795-802.

Goldman, AH 1995, 'Aesthetic properties' in D. Cooper, ed., *A Companion to aesthetics*, Blackwell, Oxford.

Goldsmith, RE, Frieden, J & Henderson, KV 1995, 'The impact of social values on food-related attitudes', *Journal of Product & Brand Management*, vol.4, no.4, pp.6-14.

Goodman, N 1968, *Languages of art*, Hackett Publishing, Indianapolis, IN.

Göritz, AS & Moser, K 2006, 'Web-based mood induction', *Cognition and Emotion*, vol. 20, no. 6, pp. 887-96.

Göritz, AS 2007, 'Using online panels in psychological research', in KM Adam, N Joinson, T Postmes & UD Reips (eds.*), The Oxford Handbook of Internet Psychology*, Oxford University Press, Oxford, pp. 437-85.

Göritz, AS., Wolff, HG & Goldstein, DG 2008, 'Individual payments as a longer-term incentive in online panels', *Behavior Research Methods*, vol. 40, no. 4, pp.1144-9.

Grace, D & Weaven, S 2011, 'An empirical analysis of franchisee value-in-use, investment risk and relational satisfaction', *Journal of Retailing*, vol. 87, no. 3, pp. 366-80.

Granello, DH & Wheaton, JE 2004, 'Online data collection: Strategies for research', *Journal of Counseling & Development*, vol. 82, no. 4, pp. 387-93.

Greenbaum, TL 2003, 'Focus group research: why the traditional research methodology works so effectively and why it deserves to be the most respected of all qualitative research tools', *Quirk's Marketing Research Review*, June, pp.1-5.

Grewal, D., Krishnan, R., Baker, J. & Borin, N 1998,'The Effect of store name, brand name and price discounts on consumers evaluations and purchase intentions', *Journal of Retailing*, vol. 74, no.3, pp. 331–52.

Grimm, PE 2005, 'A components' impact on brand preference', *Journal of Business Research*, vol. 58, no. 4, pp. 508-17.

Grohmann, B, Spangenberg, ER & Sprott, DE 2007, 'The influence of tactile input on the evaluation of retail product offerings', *Journal of Retailing*, vol. 83, no.2, pp. 237-45.Grossman, RP & Wisenblit, JZ 1999, 'What we know about consumers' colour choices', *Journal of Marketing Practice*, vol. 5, no.3, pp. 78–88.

Grundvåg Ottesen, G., Grønhaug, K. and Johnsen, O. 2002, 'Benefiting from Commissioned Research: The Role of Researcher – Client Cooperation', *Creativity and Innovation Management*, vol.11, no.2, pp.88–97, doi: 10.11 11/1467-8691.00240.

Gummerus, J 2013, 'Value creation processes and value outcomes in marketing theory: strangers or siblings?', *Marketing Theory*, vol.13, no.1, pp.19–46.

Gutman, J 1982, 'A Means–end chain model based on consumer categorization processes', *Journal of Marketing*, vol. 46, no.1, pp. 60–72.

Haenlein, M & Kaplan, AM 2004, 'A beginner's guide to partial least squares analysis', *Understanding statistics*, vol. 3, no.4, pp. 283-97.

Hager, MA, Wilson, S, Pollak, TH & Rooney, PM 2003, 'Response rates for mail surveys of nonprofit organizations: a review and empirical test', *Nonprofit and Voluntary Sector Quart*erly, vol.32, no.2, pp.252-67.

Hagtvedt, H & Patrick, VM 2014, 'Consumer response to overstyling: Balancing aesthetics and functionality in product design', *Psychology & Marketing*, vol.31, no.7, pp.518-25.

Hair, J, Black, W, Babin, B & Anderson, R 2010, *Multivariate data analysis*, 7th edn, Prentice Hall, Upper Saddle River.

Hair, JF, Ringle, CM & Sarstedt, M 2011. 'PLS-SEM: indeed a silver bullet', *Journal of Marketing Theory and Practice*, vol. 19, no.2, pp.139-152.

Hair, JF, Sarstedt, M, Ringle, CM & Mena, JA 2012, 'An Assessment of the use of partial least squares structural equation modelling in marketing research', *Journal of the Academy of Marketing Science*, vol.40, no.3, pp. 414-33.

Hair, JF, Hult, GTM, Ringle, CM & Sarstedt, M 2014, *A Primer on partial least squares structural equation modeling (PLS-SEM)*, Sage, Thousand Oaks, Newbury Park, CA.

Håkansson, H (ed.) 1982, *International marketing and purchasing of industrial goods: an interaction approach*, John Wiley & Sons, Chichester.

Hall, RH & Hanna, P 2004, 'The impact of web page text-background colour combinations on readability, retention, Aesthetics and behavioural intention', *Behaviour & Information Technology*, vol. 23, no.3, pp.183–95.

Ham, V 1999, 'Tracking the truth or selling one's soul? Reflections on the ethics of a piece of commissioned research', *British Journal of Educational Studies*, vol. 47, no.3, pp.275-82.

Han, X 2004, 'Cubic trigonometric polynomial curves with a shape parameter', *Computer Aided Geometric Design*, vol. 21, no. 6, pp. 535-48.

Han, SH, Kim, KJ, Yun, MH, Hong, SW and Kim, J 2004, 'Identifying mobile phone design features critical to user satisfaction', *Human Factors and Ergonomics in Manufacturing*, vol. 14 , no.1, pp. 15-29.

Hard, A & Sivik, L 2001, 'A theory of colours in combination—A descriptive model related to the NCS colour-order system', *Colour Research & Application*, vol.26, no.1, pp 4-28.

Hartman, RS 1967, *The Structure of value: foundations of a scientific axiology*, Carbondale, Southern Illinois University Press, IL.

Hartman, RS 1973, *The Hartman Value Profile (HVP): manual of interpretation*, Research Concepts, Muskegon, MI.

Hassenzahl, M 2004, 'The interplay of beauty, goodness, and usability in interactive products', *Human–Computer Interaction*, vol.19, no. 4, pp. 319–49.

Hassenzahl, M 2008, 'Aesthetics in interactive products: correlates and consequences of beauty', in HN Schifferstein & P Hekkert (eds.), *Product Experience*, Elsevier, San Diego, pp. 287-302.

Hawkins, DI & Mothersbaugh, DL 2010, *Consumer behavior: building marketing strategy*, McGraw-Hill, Irwin, Boston, MA.

Heerwegh, D 2006, 'An investigation of the effect of lotteries on web survey response rate', *Field Methods*, vol.18, no.2, pp. 205–20.

Henseler, J, Ringle, CM & Sinkovics, RR 2009, 'The use of partial least squares path modeling in international marketing', *New Challenges to International Marketing*, pp. 277-319.

Hensley, RL 1999, 'A review of operations management studies using scale development techniques', *Journal of Operations Management*, vol. 17, no.3, pp. 343-58.

Herwitz, DA 2008, *Aesthetics: key concepts in philosophy*, Continuum, London

Heskett, J, Jones, T, Loveman, G, Sasser, W, Jr & Schlesinger, L 1994, 'Putting the service-profit chain to work', *Harvard Business Review*, (March-April), pp.167-174.

Hetrick, J 2011, *Aisthesis in radical empiricism: Gustav Fechner's psychophysics and experimental aesthetics*, Proceedings of the European Society for Aesthetics, vol. 3, pp. 139-153, viewed 19 May 2013, http://proceedings.Eurosa.org/3/het rick2011.pdf.

Hill, RW, 1969, 'Some reflections on consumer panels', *European Journal of Marketing*, vol.3, no.2, pp.63-75.

Hirschman, EC & Holbrook, MB 1982, 'Hedonic consumption: emerging concepts, methods and propositions', *Journal of Marketing*, vol.46, no.3 (Summer), pp. 92–101.

Hirschman, EC & Solomon, MR 1984, 'Utilitarian, aesthetic, and familiarity responses to verbal versus visual advertisement', *Advances in Consumer Research*, vol.11, pp.426-31.

Hoegg, J & Alba, JW 2007, 'Taste perception: more than meets the tongue', *Journal of Consumer Research*, vol.33, pp.490–8.

Hoegg, J, Alba, JW, & Dahl, DW 2010, 'The good, the bad, and the ugly: Influence of aesthetics on product feature judgments', *Journal of Consumer Psychology*, vol. 20, no.4, pp. 419−430.

Holbrook, MB 1981, 'Introduction: The Esthetic imperative in consumer research', in EC Hirschman , MB Holbrook & A Arbor (eds.), *Symbolic Consumer Behavior*, Association for Consumer Research, pp. 36-37.

Holbrook, MB 1982, 'Mapping the retail market for esthetic products: the case of jazz records', *Journal of Retailing*, vol.58, pp.114– 129.

Holbrook, MB 1983, 'Using a structural model of halo effect to assess perceptual distortion due to affective overtones', *Journal of Consumer Research*, no. 2, pp. 247-252.

Holbrook, MB 1994, 'The Nature of customer value: an axiology of services in the consumption experience', in R Rust & RL. Oliver (eds), *Service Quality: New Directions in Theory and Practice*, Sage, Thousand Oaks, pp. 21–71.

Holbrook, MB 1999, 'Introduction to consumer value', in MB Holbrook (ed.), *Consumer Value. A Framework for Analysis and Research*, Routledge, London, pp. 1–28.

Holbrook, MB 2005, 'The role of ordinary evaluations in the market for popular culture: do consumers have good taste?', *Marketing Letters*, vol.16, no.2, pp.75–86.

Holbrook, MB 2006, 'Consumption experience, customer value, and subjective personal introspection: an illustrative photographic essay', *Journal of Business Research*, vol.59, no.6, pp.714-25.

Holbrook, MB & Hirschman, EC 1982, 'The Experiential aspects of consumption: consumer fantasies, feelings, and fun', *Journal of Consumer Research*, vol.9, no. 2, pp. 132–40.

Holbrook, MB & Zirlin, RB 1985, 'Artistic creation, art-works, and aesthetic appreciation', *Advances in Non-Profit Marketing*, vol.1, no.1, pp.1-54.

Hornik, J & Rubinow, SC 1981, 'Expert-respondents' synthesis for international advertising research', *Journal of Advertising Research*, vol. 21, no.3, pp. 9-17.

Hoyer, W & Stokburger-Sauer, NE 2012,'The role of aesthetic taste in consumer behaviour', *Academy of Marketing Science*, vol.40, pp.167-80.

Hunt, SD., Sparkman, RD., & Wilcox, JB 1982, 'The pretest in survey research: issues and preliminary findings', *Journal of Marketing Research*, vol. 19, no.5, pp. 269-273.

Hunt, KJ, Shlomo, N & Addington-Hall, J 2013, 'Participant recruitment in sensitive surveys: a comparative trial of 'opt in' versus 'opt out' approaches', *Medical research methodology (BMC)*, vol.13, no.3.

Hupka, RB, Zaleski, Z, Otto, J., Reidl, L & Tarabrina, NV 1997, 'The colours of anger, envy, fear, and jealousy: a cross-cultural study', *Journal of Cross-cultural Psychology*, vol. 28, no.2, pp. 156–71.

Ilieva, J, Baron, S & Healey, NM 2002, 'Online surveys in marketing research: pros and cons', *International Journal of Marketing Research*, vol. 44, no.3, pp. 361-76.

International Data Corporation 2013, *Worldwide mobile phone market forecast to grow 7.3% in 2013 driven by 1 billion smartphone shipments, according to IDC*, viewed 19 May 2013, http://www.idc.com/getdoc.jsp?containerId=prUS 24302813.

Isaacson, W 2011, *Steve Jobs, a Biography*, Simon & Schuster, New York, NY.

Jang, N, Dickerson, KG & Hawley, JM 2005, 'Apparel product development: measures of apparel product success and failure', *Journal of Fashion Marketing and Management*, vol. 9, no.2, pp.195–206.

Jansson-Boyd, C, Marlow, N 2007, 'Not only in the eye of the beholder: tactile information can affect aesthetic evaluation', *Psychology of Aesthetics, Creativity, and the Arts*, vol.1, no.3, pp. 170–173.

Jarvis, CB, MacKenzie SB, Podsakoff, PM 2003, 'A critical review of construct indicators and measurement model misspecification in marketing and consumer research', *Journal of Consumer Research*, vol.30, no.2, pp. 199–218.

Johanson, GA & Brooks, GP 2009, 'Initial Scale Development: Sample Size for Pilot Studies', *Educational And Psychological Measurement*, vol.xx, no.x, pp.1-7.

John, G 1984, 'An Empirical investigation of some antecedents of opportunism in a marketing channel', *Journal of Marketing Research*, vol.21, no.3, pp. 278-89.

Johnson, P, Buehring, A, Cassell, C & Symon, G 2007, 'Defining qualitative management research: an empirical investigation', *Qualitative Research in Organizations and Management*, vol. 2, p. 23-42.

Johnson, RB, Onwuegbuzie AJ, & Turner, LA 2004, 'Toward a definition of mixed methods research', *Journal of Mixed Methods Research*, vol. 1, no.2, pp. 112-33.

Jordan, PW, Thomas, B & McClelland, IL 1996, 'Issues for usability evaluation in industry: seminar discussions', in PW Jordan (ed.), *Usability evaluation in industry*, Taylor and Francis, London, pp. 237−43.

Jöreskog, KG 1978, 'Structural analysis of covariance and correlation matrices', *Psychometrika*, vol.43, pp.443-73.

Jöreskog, KG 1993, 'Testing structural equation models', *Sage Focus Edition*, vol.15, no.4, pp. 294-316.

Jöreskog, KG & Wold, H 1982, 'The ML and PLS techniques for modelling with latent variables: historical and competitive aspects', in KG Jöreskog & H Wold (eds.), *Systems under indirect observation*, North-Holland, Amsterdam, pp. 263–70.

Kahn, BE & Wansink, B 2004, 'The influence of assortment structure on perceived variety and consumption quantities', *Journal of Consumer Research*, vol.30, no.4, pp. 519–33.

Kalins, D 2003, *It's cool to be warm*, Newsweek, viewed 27 October 2013, http://www.newsweek.com/its-cool-be-warm-139079.

Kates, SM 2001, 'Camp as cultural capital: further elaboration of a consumption taste', *Advances in consumer research*, vol.28, pp.334-9.

Katz, JE & Sugiyama, S 2006, 'Mobile phones as fashion statements: evidence from student surveys in the US and Japan', *New Media & Society*, vol. 8, no.2, pp. 321-37.

Kauppinen-Räisänen, H & Luomala, HT 2010, 'Exploring consumers' product-specific colour meanings', *Qualitative Market Research: An International Journal*, vol.13, no.3, pp.287-308.

Kempf, DS 1999, 'Attitude formation from product trial: distinct roles of cognition and affect for hedonic and functional products', *Psychology and Marketing*, vol.16, no.1, pp. 35-50.

Kerfoot, S, Davies, B & Ward, P 2003, 'Visual merchandising and the creation of discernible retail brands', *International Journal of Distribution and Retail Management*, vol.31, no.3, pp. 143–52.

Khan, AM 2012, *The influence of corporate sponsorship on the sponsor's employees*, thesis, Penrith, University of Western Sydney, Viewed 31 March 2013, Australian Digital Thesis database.

Khalifa, AS 2004, 'Customer value: a review of recent literature and an integrative configuration', *Management Decision*, vol. 42, no.5, pp. 645– 66.

Kim, S 2003, 'Research paradigms in organizational learning and performance: competing modes of inquiry', *Information Technology, Learning, and Performance Journal*, vol.21, no.1, pp.9-18.

King, A 2012, *Aesthetic Attitude*, Internet Encyclopedia of Philosophy, viewed 27 May 2013, http://www.iep.utm.edu/aesth-at/.

Kitchenham, B & Pfleeger, SL 2002, 'Principles of survey research part 4: questionnaire evaluation', *ACM SIGSOFT Software Engineering Notes*, vol. 27, no.3, pp.20–3.

Kock, N 2011, 'Using WarpPLS in e-collaboration studies: descriptive statistics, settings, and key analysis results', *International Journal of e-Collaboration*, vol. 7, no.2, pp.1-18.

Kock, N 2014, 'Advanced mediating effects tests, multi-group analyses, and measurement model assessments in PLS-based SEM', *International Journal of e-Collaboration (IJeC)*, vol.10, no. 1, pp.1-13.

Kock, N & Lynn, GS 2012, 'Lateral collinearity and misleading results in variance-based SEM: an illustration and recommendations', *Journal of the Association for Information Systems*, vol.13, no.7, pp. 546-80.

Koller, M, Floh, A & Zauner, A 2011, 'Further insights into perceived value and consumer loyalty: a "green" perspective', *Psychology & Marketing*, vol. 28, no. 12, pp.1154-76.

Konecni, VJ 2005, 'The aesthetic trinity: Awe, being moved, thrills', *Bulletin of Psychology and the Arts*, vol.*5, no.*2, pp.27-44.

Kumar, M & Garg, N 2010, 'Aesthetic principles and cognitive emotion appraisals: how much of the beauty lies in the eye of the beholder?', *Journal of Consumer Psychology*, vol. 20, pp.485-94.

Kwon, HH, Trail, G, & James, JD 2007, 'The mediating role of perceived value: Team identification and purchase intention of team-licensed apparel', *Journal of Sport Management*, vol. 21, no.4, 540-54.

Lai, AW 1995, 'Consumer values, product benefits and customer value: a consumption behavior approach', *Advances in consumer research*, vol. *22*, pp. 381-88.

Lam, SY & Mukherjee A 2005, 'The effects of merchandise coordination and juxtaposition on consumers' product evaluation and purchase intention in store-based retailing', *Journal of Retailing*, vol. 81, no.3, pp.231-50.

Lantos, G 2011, *Consumer behavior in action: real-life applications for marketing managers*, Sharpe, New York, England.

Lapierre, J, Filiatrault, P & Chebat, JC 1999, 'Value strategy rather than quality strategy: a case of business-to-business professional services', *Journal of Business Research*, vol.45, no.2, pp. 235–46.

Lavie, T & Tractinsky, N 2004, 'Assessing dimensions of perceived visual aesthetics of web sites', *International Journal of Human-Computer Studies*, vol. 60, no. 3, pp.269-98.

Leclerc, F & Schmitt, BH 1999, 'The Value of time in the context of waiting and delays', in MB Holbrook (ed.), *Consumer Value. A Framework for Analysis and Research*, Routledge, London, pp. 29–42.

Lee, D & Trail, GT 2012, 'Confirmatory analysis of the athletic team merchandise model', *Measurement in Physical Education and Exercise Science*, vol.16, no.2, pp.101-118.

Lee, D, Trail, GT, Kwon, HH & Anderson, DF 2011, 'Consumer values versus perceived product attributes: relationships among items from the MVS, PRS, and PERVAL scales', *Sport Management Review*, vol.14, no.1, pp.89-101.

Lee, RM 1993, *Doing research on sensitive topics*, Sage, London.

Lee, S & Koubek, RJ 2010, 'Understanding user preferences based on usability and aesthetics before and after actual use', *Interacting with Computers*, vol.22, no.6, pp. 530-43.

Lee, T & Jun, J 2007, 'Contextual perceived value? Investigating the role of contextual marketing for customer relationship management in a mobile commerce context', *Business Process Management Journal*, vol. 13, no.6, pp.798-814.

Lee, YS, Kim, HY, Lee, IS & Kim, JW 2002, 'The Empirical study on use value of mobile internet', Proceedings of Korean human-computer interaction, vol. 11, Korea.

Lemmink, J, de Ruyter, K & Wetzels, M 1998, 'The Role of value in the delivery process of hospitality service', *Journal of Economic Psychology*, vol.19, no.2, pp.159–77.

Lepkowski, JM & Couper, MP 2002, 'Nonresponse in the second wave of longitudinal household surveys', in RM Groves, DA Dillman, JL Eltinge & Little, RJA (eds.), *Survey Nonresponse*, John Wiley & Sons, New York, NY, pp. 259–73.

Leung, L & Wei, R 2000, 'More than just talk on the move: uses and gratifications of the cellular phone', *Journalism and Mass Communication Quarterly*, vol. 77, no. 2, pp. 308-20.

Levy, M 1999, 'Revolutionizing the Retail Pricing Game', Discount Store News, vol.38, no. 18, p.15.

Levy, SJ & Czepiel, JA 1974, 'Marketing and Aesthetics', Proceedings of the 1974 National Conference, *American Marketing Association*, Chicago, pp. 386-91.

Li, WK., Monroe, KB & Chan, DKS 1994, 'The Effects of Country of Origin, Brand, and Price Information: A Cognitive-Affective Model of Buying Intentions', *Advances in Consumer Research*, vol.21, no.1, pp. 449–56.

Likert, R 1932, 'A Technique for the measurement of attitudes', *Archives of Psychology*, vol.140, pp.1–55.

Lin, CP & Bhattacherjee, A 2010, 'Extending technology usage models to interactive hedonic technologies: A theoretical model and empirical test', *Information Systems Journal*, vol. 20, no. 2, pp.163-81.

Little, RJA & Rubin, DB 1987, *Statistical analysis with missing data*, John Wiley & Sons, New York, NY.

Lohmoller, JB 1989, *Latent variable path modelling with partial Least squares*, Physica, Heidelberg.

Lojacono, G & Zaccai, G 2012, 'The evolution of the design-inspired enterprise', *MIT Sloan Management Review*, vol.45, no.3, pp.75–9.

Loosveldt, G & Sonck, N 2008, 'An evaluation of the weighting procedures for an online access panel survey', *Survey Research Methods*, vol.2, no.2, pp. 93-105.

Lyotard, JF 1984. *The post-modern condition: A report on knowledge*, Translated by G Bennington & B Massumi. Manchester University Press, Manchester.

MacCallum, RC & Austin, JT 2000, 'Applications of structural equation modelling in psychological research', *Annual Review of Psychology*, vol. 51, no.1, pp.201–226.

Macnee, CL 2004, *Understanding nursing research: reading and using research in practice*, Lippincott Williams & Wilkins Philadelphia, PA.

Malhotra, NK 2010, *Marketing research: an applied orientation*, Pearson, Upper Saddle River, NJ.

Malhotra, NK, Agarwal, J & Peterson, M 1996, 'Methodological issues in cross-cultural marketing research - a state-of-the-art review', *International Marketing Review*, vol. 13, no. 5, pp.7-43.

Malhotra, NK & Birks, DF 2006, *Marketing research: an applied approach*, 3rd edn, Pearson, Harlow.

Malhotra, NK, Birks, DF & Wills, P 2012, *Marketing research: An applied approach*, 4th edn, Pearson, Harlow.

Mannetti, L, Pierro, A & Livi, S 2002, 'Explaining consumer conduct: from planned to self-expressive behavior', *Journal of Applied Social Psychology*, vol. 32, no. 7, pp.1431–51.

Martindale, C 1988, 'Aesthetics, psychobiology, and cognition', in F Farley & R Neperud (eds.), *The Foundations of aesthetics, art, and art education*, Praeger, New York, NY, pp. 7−42.

Martindale, C, Moore, K & Borkum, J 1990, 'Aesthetic preference: anomalous findings for Berlyne's psychobiological theory', *American Journal of Psychology*, vol.103, no.1, pp.53–80.

Mathews, R 2004, 'The psychosocial aspects of mobile phone use amongst adolescents', *Psych*, vol.26 , no.6, pp.16–19.

Mathwick, C., Malhotra, N & Rigdon, E 2001, 'Experiential value: conceptualization, measurement and application in the catalog and internet shopping environment', *Journal of Retailing*, vol. 77, no.1, pp. 39–56.

Mattsson, J 1991, *Better business by the ABC of Values*, Studdentlitteratur, Lund.

McCabe, DB & Nowlis, SM 2003, 'The effect of examining actual products or product descriptions on consumer preference', *Journal of Consumer Psychology*, vol.13, no.4, pp.431-9.

McDermott, E, Vincentelli, M & Venus, J 2005, 'The use of piloting in an application for funding', *Social Research Update*, no. 45, pp.1-4.

Mehrabian, A. 1981, *Silent messages: implicit communication of emotions and attitudes*, Wadsworth, Belmont, CA.

Meyers-Levy, J & Zhu, R 2010, 'Gender differences in the meanings consumers infer from music and other aesthetic stimuli', *Journal of Consumer Psychology*, vol.20, no.4, pp.495−507.

Miles, M. B., & Huberman, AM 1994, *Qualitative data analysis: An expanded sourcebook*, Sage, Thousand Oaks, CA.

Miller, M & Adler, J 2003, 'Design 2004: Isaac hits his target', *Newsweek*, October 27, pp.74–77.

Mizerski, RW & White, JD 1986, 'Understanding and using emotions in advertising', Journal *of Consumer Marketing*, vol.3, no.4, pp. 57–69.

Mohamadali, NAKS 2012, *Exploring new factors and the question of ' which' in user acceptance studies of healthcare software noor*, thesis, Nottingham, The University of Nottingham, viewed 12 March 2012, http://ima.ac.uk/ papers/noor_thesis.pdf.

Monroe, KB & Krishnan, R 1985, 'The Effect of price on subjective product evaluations', *Perceived Quality*, vol.1, pp.209-32.

Mugge, R, Schifferstein, HNJ & Schoormans, JPL 2008, 'Product attachment and satisfaction: the effects of pleasure and memories', in S Borghini, M McGrath & CC Tones (eds.), *European Advances in Consumer Research*, vol.8 , Association for Consumer Research, Duluth, MN.

Nancarrow, C, & Cartwright, 2007, 'Online access panels and tracking research - the conditioning issue', *International Journal of Market Research*, vol.49, no.5, pp.573-594.

Nasar, JL 1988, 'Perception and evaluation of residential street scenes', in JL Nasar, (ed.), *Environmental Aesthetics: Theory, Research, and Applications*, Cambridge University Press, Cambridge.

Netemeyer, RG & Burton, S 1990, 'Examining the relationships between voting behavior, intention, perceived behavioral control, and expectation', *Journal of Applied Social Psychology*, vol.20, no.8, pp. 661-680.

Neuman, WL 2000, *Social research methods: qualitative and quantitative approaches*, Allyn and Bacon, Toronto.

Nunnally, JC & Bernstein, IH 1994, *Psychometric Theory*, 3rd edn, McGraw-Hill, New York, NY.

Nysveen, H, Pedersen, PE & Thorbjørnsen, H 2005, 'Explaining intention to use mobile chat services: moderating effects of gender', *Journal of consumer Marketing*, vol.22, no.5, pp. 247-56.

Okada, EM 2005, 'Justification effects on consumer choice of hedonic and utilitarian goods', *Journal of marketing research*, vol.42, no.1, pp.43-53.

Olson, JC 1981, 'What is an esthetic response? Symbolic consumer behavior', in EC Hirschman, MB Holbrook & A Arbor (eds.), *Association for Consumer Research*, New York, NY, pp.71-74.

Olson, K, Witt, L 2011, 'Are we keeping the people who used to stay? Changes in correlates of panel survey attrition over time', *Social Science Research*, vol.40, pp. 1037–50.

Orth, UR, Wolf, MM & Dodd, TH 2005, 'Dimensions of wine region equity and their impact on consumer preferences', *Journal of Product & Brand Management*, vol.14, no.2, pp.88-97.

Osborne, H 1968, *Aesthetics and Art History*, Longman, Harlow.

Osgood, CE 1964, 'Semantic differential technique in the comparative study of cultures', *American Anthropologist*, vol.66, no.3, pp.171-200.

Ostendorp, A & Berlyne, DE 1978, 'Dimensions in the perception of architecture: identification and interpretation of dimensions of similarity', *Scandinavian Journal of Psychology*, vol.19, no.1, pp.73–82.

Overby, JW, Gardial, SF & Woodruff, RB 2004, 'French versus American consumers' attachment of value to a product in a common consumption context: a cross-national comparison', *Journal of the Academy of Marketing Science*, vol.32, no.4, pp. 437–60.

Overby, JW, Woodruff, RB & Gardial, SF 2005, 'The Influence of Culture Upon Consumers' Desired Value Perceptions: A Research Agenda', *Marketing Theory*, vol. 5, no. 2, pp. 139–63.

Ozcan, YZ & Kocak, A 2003, 'Research note: a need or a status symbol? Use of cellular telephones in Turkey', *European Journal of Communication*, vol.18, no.2, pp. 241–254.

Parasuraman, A 1997, 'Reflections on gaining competitive advantage through customer value', *Journal of the Academy of Marketing Science*, vol.25 no.2, pp.154–61.

Parasuraman, A, Zeithaml, VA & Berry, LL 1985, 'A conceptual model of service quality and its implication for future research', *Journal of Marketing*, vol.49, no.3, pp.41–50.

Park, CW, Jaworski, BJ & Maclnnis, DJ 1986, 'Strategic brand concept-image management', *Journal of Marketing*, vol.50, no. 4, pp.135-145.

Patrick, VM & Peracchio, LA 2010, 'Curating the JCP special issue on aesthetics in consumer psychology: an introduction to the aesthetics issue', *Journal of Consumer Psychology*, vol.20, no.4, pp.393-7.

Payne, A & Holt, S 2001, 'Diagnosing customer value: integrating the value process and relationship marketing', *British Journal of Management*, vol. 12, no.2, pp.159–82.

Pecheux, C & Derbaix, C 1999, 'Children and attitude toward the brand: a new measurement scale', *Journal of Adverting Research*, vol.39, no.4, pp. 19–27.

Peck, J & Childers, TL 2003, 'Individual differences in haptic information processing: on the development, validation, and use of the 'need for touch' scale', *Journal of Consumer Research*, vol.30, pp. 430–42.

Peck, J & Wiggins, J 2006, 'It just feels good: Customers' affective response to touch and its influence on persuasion', *Journal of Marketing*, vol. 70, no. 4, pp. 56-69.

Pepper, SC 1938, *Aesthetic quality: a contextualistic theory of beauty*, Charles Scribner's Sons, NY.

Petrick, JA 2002, 'Development of a multi-dimensional scale for measuring the perceived', *Journal of Leisure Research*, vol.34, no.2, pp. 119-34.

Petty, R, Cacioppo, J & Schumann, D 1983, 'Central and peripheral routes to advertising effectiveness: the moderating role of involvement', *Journal of Consumer Research*, vol.10, no.2, pp. 135- 47.

Pickford, RW 1972, *Psychology and Visual Aesthetics*, Hutchinson Educational LTD, London.

Podsakoff, PM, MacKenzie, SB, Lee, JY & Podsakoff, NP 2003, 'Common method biases in behavioral research: a critical review of the literature and recommended remedies', *Journal of Applied Psychology*, vol. 88, no. 5, pp. 879–903.

Polit, DF, Beck, Ct & Hungler, BP 2001, *Essentials of nursing research methods, appraisal, and utilization*, 5th edn, Lippincott, Philadelphia, PA.

Pollay, R & Mittal, B 1993, 'Here is the beef: factors, determinants, and segments in consumer criticism of advertising', *Journal of Advertising*, vol. 57 (July), pp. 99-114.

Pomery, EA, Gibbons, FX, Reis-Bergan, M & Gerrard, M 2009, 'From willingness to intention: experience moderates the shift from reactive to reasoned behavior', *Personality and Social Psychology Bulletin*, vol.35, no.7, pp. 894–908.

Porteous, JD 1996, *Environmental aesthetics: ideas, politics and planning*, Routledge, New York, NY.

Postrel, V 2003, *The substance of style: how the rise of aesthetic value is remaking commerce, culture, and consciousness*, Harper Collins, New York, NY.

Prall. DW 1929, *Aesthetic Judgment*, Crowell, New York.

Preacher, KJ & Hayes, AF 2004, 'SPSS and SAS procedures for estimating indirect effects in simple mediation models', *Behavior Research Methods, Instruments, and Computers*, vol. 36, pp. 717-31.

Preacher, KJ & Hayes, AF 2008, 'Asymptotic and resampling strategies for assessing and com paring indirect effects in multiple mediator models', *Behavior Research Methods*, vol. 40, no.3, pp. 879-91.

Pura, M. 2005, 'Linking perceived value and loyalty in location-based mobile services', *Managing Service Quality*, vol.15, no.6, pp. 509–38.

Pureprofile 2012, *Response to Esomar 28 questions to help research buyers*, Pureprofile company, viewed 17 April 2014, http://www.pureprofile.com.

Quester, P, Pettigrew, S & Hawkins, DI 2011, *Consumer Behaviour: Implications for Marketing Strategy*, 6th edn, McGraw-Hill, North Ryde, NSW.

Raghubir, P & Greenleaf, EA 2006, 'Ratios in proportion: what should the shape of the package be?', *Journal of Marketing*, vol. 70, no.2, pp. 95-107.

Randall, DM, & Wolff, JA 1994, 'The time interval in the intention-behaviour relationship: meta-analysis', *British Journal of Social Psychology*, vol.33 no.4, pp. 405-18.

Raustiala, K & Sprigman, C 2012, *What Apple and Red Shoes have in common: Using design to block competition*, viewed 16 Nov 2014, http://www. wired.com /2012/09/opinion-apple-louboutin-design-competition/.

Ravald, A & Gronroos, C 1996, 'The value concept and relationship marketing', *European Journal of Marketing*, vol.30, no.2, pp. 19-30.

Reimann, M, Zaichkowsky, J, Neuhaus, C, Bender, T & Weber, B 2010, 'Aesthetic package design: A behavioral, neural, and psychological investigation', *Journal of Consumer Psychology,* vol.20*, no.* 4, pp.431-41.

Reinartz, WJ, Haenlein, M & Henseler, J 2009, 'An Empirical Comparison of the Efficacy of Covariance-Based and Variance-Based SEM', *International Journal of Research in Marketing,* vol.26, pp.332-44.

Reips, U-D 2007, 'The methodology of Internet-based experiments', in A Joinson, K McKenna, T Postmes & U-D Reips (eds.), *The Oxford handbook of internet psychology*, Oxford University Press Oxford, pp. 373–390.

Research and Markets 2005, *Fashion and style in the mobile handset industry*, viewed 27 May 2014, http://www.arcchart.com/reports/dl/fashionhandsets _PRO MO .pdf.

Richins, ML 1999, 'Possessions, materialism, and other-directedness in the expression of self', in MB Holbrook (ed.), *Consumer Value: A Framework for Analysis and Research*, Routledge, London, pp. 85–104.

Robson, S & Foster, A 1989, *Qualitative Research in Action*, Hodder and Stoughton, London.

Roig, JCF, Garcia, JS, Tena, MAM & Monzonis, JL 2006, 'Customer perceived value in banking services', *International Journal of Bank Marketing,* vol. 24, no.5, pp. 266-83.

Rokeach, M 1973, *The nature of human values*, Free Press, New York, NY.

Rosenberg, MJ 1956, 'Cognitive structure and attitudinal affect', *Journal of Abnormal and Social Psychology*, vol. 53 no.3, pp. 367-72.

Rosenberg, MJ & Hovland, CI 1960, 'Cognitive, affective and behavioral components of attitudes', in MJ Rosenberg, CI Hovland, (eds.), *Attitude Organization and Change: An Analysis of Consistency Among Attitude Components*, Yale University Press, New Haven, CT, pp.1-14.

Rossiter, J R 2002, 'The C-OAR-SE procedure for scale development in marketing', *International Journal of Research in Marketing,* vol.19 no.4, pp. 305-35.

Ruiz, DM, Gremler, DD, Washburn, JH, & Capeda-Carrion, G 2008, 'Service value revisited specifying a higher-order, formative measure', *Journal of Business Research*, vol. 61, pp. 1278–91.

Russell-Bennett, R, Previte, J & Zainuddin, N 2009, 'Conceptualising value creation for social change management', *Australasian Marketing Journal (AMJ),* vol. 17, no.4, pp. 211-18.

Şahin Ekici, E, Yener, C & Camgöz, N 2006, 'Colour naming', *Optics & Laser Technology*, vol. 38, no.4, pp.466-85.

Sánchez-Fernández, R, Iniesta-Bonillo, MA 2007, 'The concept of perceived value: a systematic review of the research', *Marketing Theory*, vol.7, no.4, pp. 427-51.

Sánchez-Fernández, R & Iniesta-Bonillo, MA 2009, 'Efficiency and quality as economic dimensions of perceived value: conceptualization, measurement, and effect on satisfaction', *Journal of Retailing and Consumer Services*, vol.16, no.6, pp.425-33.

Sánchez-Garcia, J, Moliner, MA, Callarisa, L, Callarisa, L & Rodrı´guez, RM 2007, 'Relationship quality of an establishment and perceived value of a purchase', *The Service Industries*, vol. 27, no. 2, pp.151–74.

Schaper, E (ed.) 1983, *The pleasures of taste, in pleasure, preference and value*, Cambridge University Press, Cambridge.

Schenkman, BN, Jönsson, FU 2000, 'Aesthetics and preferences of web pages', *Behaviour & Information Technology*, vol. 19 no.5, pp. 367–77.

Schiffman, LG, Kanuk, LL & Wisenblit, J 2010, *Consumer behaviour*, 10th edn, Prentice Hall, Upper Saddle River, New Jersey, NJ.

Schillewaert, N, Langerak, F & Duhamel, T 1998, 'Non-probability sampling for www surveys: a comparison of methods', *Journal of the Market Research Society*, vol.40, no.4, pp.307-22.

Schlackman, W 1984, 'A discussion of the use of sensitivity panels in market research: the use of trained respondents in qualitative studies', *Journal of the Market Research Society*, vol.26, no.3, pp.191-208.

Schlomer, GL, Bauman, S & Card, NA 2010, 'Best practices for missing data management in counseling psychology', *Journal of Counseling Psychology*, vol. 57, no. 1, pp.1–10.

Schlosser, AE 2003, 'Experiencing products in a virtual world: the role of goals and imagery in influencing attitudes versus intentions', *Journal of Consumer Research*, vol. 30, no.2, pp.184–98.

Schmitt, BH & Simonson, A 1997, *Marketing Aesthetics*, The Free Press, New York, NY.

Schwartz, SH 1992, 'Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries', in MP Zanna (ed.), *Experimental social psychology*, Academic Press, San Diego, CA, pp. 1–62.

Scruton, R 1979, *The Aesthetics of architecture*, Princeton University Press, Princeton.

Seva, RR & Helander, MG 2009, 'The influence of cellular phone attributes on users' affective experiences: A cultural comparison', *International Journal of Industrial Ergonomics*, vol.39, no.2, pp.341-6.

Shearer, C 2008, 'AMA/SPSS roundtable: where have all the respondents gone?', *Marketing Research*, pp.22-6.

Sheeran, P & Orbell, S 1998, 'Do intentions predict condom use? Meta analysis and examination of six moderator variables', *British Journal of Social Psychology*, vol.37, no.2, pp.231–50.

Sheeran P & Orbell S 2000, 'Using implementation intentions to increase attendance for cervical cancer screening', *Health Psychology*, vol.19, no.3, pp. 283–9.

Shelley, J 2013, *The Concept of the aesthetic*, Stanford Encyclopedia of Philosophy, viewed 26 June 2014, http://plato.stanford.edu/entries/aesthetic-concept.

Sheppard, BH, Hartwick, J & Warshaw, PR 1988, 'The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and future research', *Journal of Consumer Research*, vol.15, no.3, pp. 325–43.

Sherwood, M 1999, 'Winning the shelf wars', *Global Cosmetic Industry*, vol. 164 no.3, pp.64-7.

Sheth, JN, Newman, BI & Gross, BL 1991a, '*Consumption Values and Market Choices, Theory and Applications'*, South-Western Publishing Co, Cincinnati, OH.

Sheth, JN, Newman, BI & Gross, BL 1991b, 'Why we buy what we buy: a theory of consumption values', *Journal of Business Research*, vol. 22, no.2, pp.159–70.

Sibley, F 2001, *Approach to aesthetics: collected papers on philosophical aesthetics*, Clarendon Press, Oxford.

Silvera, DH, Josephs RA & Giesler RB 2002, 'Bigger is better: The influence of physical size on aesthetic preference judgments', *Journal of Behavioral Decision Making*, vol.15, no.3, pp. 189–202.

Smith, NC, 1999, 'Ethics and the typology of consumer value', in MB Holbrook (ed), *Consumer value, a framework for analysis and research*, Routledge, London, pp. 147–58.

Smith, RE & Wright, WF 2004, 'Determinants of customer loyalty and financial performance', *Journal of Management Accounting Research*, vol.16, no.1, pp. 183–205.

Solomon, MR 1999, 'The Value of status and the status of value', in MB Holbrook (ed.), *Consumer value, a framework for analysis and research*, Routledge, London, pp. 63–84.

Solomon, MR 2007, *Consumer behaviour: buying, selling, and being*, 7th edn, Pearson Prentice Hall, Saddle River, New Jersey, NJ.

Solomon, MR, Ashmore, RD & Longo, LC 1992, 'The beauty match-up hypothesis: congruence between types of beauty and product images in advertising', *Journal of Advertising,* vol.21, no.4, pp.23-34.

Sparrow, N 2007, 'Quality issues in online research', *Journal of Advertising Research*, vol.47, no.2, pp.179-182.

Spicher, M 2010, *Medieval Theories of Aesthetics*, Internet Encyclopedia of Philosophy, viewed 5 July 2014, http://www.iep.utm.edu/m-aesthe/.

Spijkerman R, Van den Eijnden, RJ, Engels, RC 2005, 'Self-comparison processes, prototypes, and smoking onset among early adolescents', *Preventive Medicine*, vol. 40, no.6, pp. 785–94.

Stich, C 2004, *Development of scales for aesthetic research*, thesis, Berlin, Free University of Berlin, viewed 31 March 2013, http://www.diss.fu-berlin.de/diss/servlets/MCRFileNodeServlet /FUDISS _derivate_ 000000001553/00_Deckblattua.pdf.

Stokes, D & Bergin, R 2006, 'Methodology or methodolatry? An evaluation of focus groups and depth interviews', *Qualitative Market Research: An International Journal,* vol. 9**,** no.1, pp.26-37.

Stolnitz, J 1960, *Aesthetics and Philosophy of Art Criticism*, Houghton Mifflin, New York, NY.

Stone, M 1974, 'Cross-validatory choice and assessment of statistical predictions', *Journal of the Royal Statistical Society*, vol.36, pp.111–47.

Straub, D, Boudreau, MC & Gefen, D 2004, 'Validation guidelines for IS positivist research', *Communication of AIS*, vol. 3, pp.380–427.

Sutton, RI 1989, 'Reactions of nonparticipants as additional rather than missing data: opportunities for organizational research', *Human Relations*, vol.42, no.5, pp.423-39.

Swait, J, Sweeney, JC 2000, 'Perceived value and its impact on choice behavior in a retail setting', *Journal of Retailing and Consumer Services*, vol.7, pp. 77-88.

Swanson, RA 1992, 'Demonstrating financial benefits to clients', in HD Stolovitch & E Keeps (eds.), *Handbook of Human Resource Technology*, Jossey-Bass, San Francisco, CA.

Swede, G 1994, 'Basic theoretical issues', in G Swede (ed.), *The Psychology of art: an experimental approach*, Canadian Scholars Press Inc, Toronto.

Sweeney, JC & Soutar, GN 2001, 'Consumer perceived value: the development of a multiple item scale', *Journal of Retailing,* vol.77, no.2, pp.203-20.

Sweeney, JC, Soutar, GN & Johnson, LW 1999, 'The role of perceived risk in the quality-value relationship: a study in a retail environment', *Journal of retailing*, vol.75, no.1, pp.77-105.

Swilley, E 2012, 'Aesthetic technology: scale development and measurement', *International journal of technology marketing*, vol. 7, no.3, pp: 324- 41.

Tashakkori, A & Teddlie, C 1998, *Mixed Methodology: Combining Qualitative and Quantitative Approaches*, Sage, Thousand Oaks, CA.

Tatarkiewicz, W 1963, 'Classification of arts in antiquity', *Journal of the History of Ideas*, vol. 24, no. 2, pp. 231–40.

Teas, RK & Agarwal, S. 2000, 'The Effects of Extrinsic Product Cues on Consumers' Perceptions of Quality, Sacrifice, and Value', *Journal of the Academy of Marketing Science*, vol. 28, no. 2, pp. 278–90.

Teijlingen, EV & Hundley, V 2002, 'The importance of pilot studies', *Social Research update*, no.35, pp.1-4.

Tenenhaus, M, Esposito Vinzi, V, Chatelin, Y& Lauro, C 2005, 'PLS path modeling', *Computational Statistics and Data Analysis*, vol.48, no.1, pp.159–205.

Tepper, B, Duffy, M & Shaw, J 2001, 'Personality moderators of the relationship between abusive supervision and subordinates' resistance', *Journal of Applied Psychology*, vol. 86, no. 5, pp. 974- 83.

Thornton B, Gibbons, FX & Gerrard, M 2002, 'Risk perception and prototype perception: Independent processes predicting risk behaviour', *Personality and Social Psychology Bulletin*, vol.28, no.7, pp. 986–99.

Townsend, D 1997, *An introduction to Aesthetics*, Blackwell Malden, MA.

Tractinsky, N, Cokhavi, A, Kirschenbaum, M & Sharfi, T 2006, 'Evaluating the consistency of immediate aesthetic perceptions of web pages', *International Journal of Human-Computer Studies,* vol. 64, no.11, 1071-83.

Tractinsky, N, Shoval-Katz, A & Ikar, D 2000, 'What is beautiful is usable', *Interacting with Computers*, vol.13, pp. 127–45.

Treacy, M & Wiersema, F 1993, 'Customer intimacy and other value disciplines', *Harvard business review*, vol.71, no. 1, pp.84-93.

Tsiotsou, R 2006, 'The role of perceived product quality and overall satisfaction on purchase intentions', *International Journal of Consumer Studies*, vol. 30, no.2, pp. 207-17.

Tuch, A. N, Roth, SP, Hornbæk, K, Opwis, K & Bargas-Avila, JA 2012, 'Is beautiful really usable? Toward understanding the relation between usability,

aesthetics, and affect in HCI', *Computers in Human Behavior*, vol. 28, no.5, pp.1596-1607.

Turel, O, Serenko, A & Bontis, N 2007, 'User acceptance of wireless short messaging services: deconstructing perceived value', *Information & Management*, vol.44, no.1, pp. 63-73.

Turel, O, Serenko, A & Bontis, N 2010, 'User acceptance of hedonic digital artifacts: a theory of consumption values perspective', *Information and Management*, vol. 47, no.1, pp.53–59.

Tzou, RC & Lu, HP 2009, 'Exploring the emotional, aesthetic, and ergonomic facets of innovative product on fashion technology acceptance model', *Behaviour and Information Technology*, vol.28, no.4, pp. 311-22.

Unger, LS & Kerna, JB 1983, 'On the meaning of leisure: an investigation on some determinants of the subjective leisure experience', *Journal of Consumer Research*, vol. 9, no.4, pp. 381–39.

Urbach, N & Ahlemann, F 2010, 'Structural equation modelling in information systems research using partial least squares', *Journal of Information Technology Theory and Application (JITTA*), vol.11, no.2, pp.5-40.

Vacker, B & Key, WR 1993, 'Beauty and the beholder: the pursuit of beauty through commodities', *Psychology and Marketing*, vol. 10, no.6, pp.471-94.

Van der Haar, JW, Kemp, RGM & Omta, O 2001, 'Creating value that cannot be copied', *Industrial Marketing Management*, vol. 30, no. 8, pp. 627–36.

Van der Heijden, H 2003, 'User acceptance of hedonic information systems', *MIS Quarterly*, vol.28, no.4, pp.695-704.

Van Damme, W 1991, 'Some notes on defining aesthetics in the anthropological literature', *Journal of the Anthropological Society of Oxford*, vol.22, no.2, pp. 167–81.

Van Empelen, P & Kok, G 2006, 'Condom use in steady and casual sexual relationships: planning, preparation and willingness to take risks among adolescents', *Psychology & Health*, vol.21, no.2, pp.165-81.

Venkatesh, A & Meamber, LA 2006, 'Arts and aesthetics: marketing and cultural production', *Marketing Theory*, vol.6, no.1, pp.11-39.

Veryzer, RW 1993, 'Aesthetic response and the influence of design principles on product preferences', *Advances in Consumer Research*, vol. 20, no.1, pp.224-8.

Veryzer, RW 1995, 'The Place of product design and aesthetics in consumer research', *Advances in consumer research*, vol.22, pp. 641-5.

Veryzer, RW & Hutchinson, JW 1998, 'The Influence of unity and prototypicality on aesthetic responses to new product designs', *Journal of Consumer Research*, vol. 24, no. 4, pp. 374–94.

Vigneron, F & Johnson, LW 1999, 'A review and a conceptual framework of prestige-seeking consumer behavior', *Academy of Marketing Science Review*, vol.1, no.1, pp.1-15.

Wagner, J 1999, 'Aesthetic value: beauty in art and fashion', in MB Holbrook (ed.), *Consumer Value: A Framework for Analysis and Research*, Routledge, London, pp.126–46.

Walsh, G & Mitchell, VW 2010, 'Consumers' intention to buy private label brands Revisited', *Journal of General Management*, vol. 35, no.3, pp.3–24.

Walsh, G, Shiu, E & Hassan, LM 2014, 'Replicating, validating, and reducing the length of the consumer perceived value scale', *Journal of Business Research*, vol.67, no.3, pp. 260-7.

Walsh, SP & White, KM 2006, 'Ring, ring, why did I make that call? Mobile phone beliefs and behaviour among Australian university students', *Youth Studies Australia*, vol.25, no.3, pp. 49–57.

Walsh, SP & White, KM 2007, 'Me, my mobile and I: the role of self and prototypical identity influences in the prediction of mobile phone behavior', *Journal of Applied Social Psychology*, vol.37, no. 2405–34.

Walsh, SP, White, KM & Young, RM 2009, 'The phone connection: A qualitative exploration of how belongingness and social identification relate to mobile phone use amongst Australian youth', *Journal of Community and Applied Social Psychology*, vol.19, pp. 225–40.

Wang, CC 2005, 'Factors that influence the piracy of DVD/VCD motion pictures', *Journal of American Academy of Business*, vol.6, no.1, pp. 231-37.

Wang, EST 2010, 'Impact of multiple perceived value on consumers' brand preference and purchase intention: a case of snack foods', *Journal of Food Products Marketing*, vol.16, no. 4, pp. 386-97.

Wang, Y, Lo, HP, Chi, R & Yang, Y 2004, 'An Integrated framework for customer value and customer-relationship-management performance: a customer-based perspective from China', *Managing Service Quality*, vol. 14, no. 2–3, pp. 169–82.

Wang, YJ, Cruthirds, KW, Axinn, CN & Guo, C 2013, 'In search of aesthetics in consumer marketing: an examination of aesthetic stimuli from the philosophy of art and the psychology of art', *Academy of Marketing Studies Journal*, vol. 17, no. 2, pp.37-55.

Warshaw, PR & Davis, FD 1985, 'Disentangling behavioral intention and behavioral expectation', *Journal of experimental social psychology*, vol. 21, no.3, pp. 21 3-228.

Waterton, J & Lievesley, D 1987, 'Attrition in a panel study of attitudes', *Journal of Official Statistics*, vol. 3, no.3, pp. 267–282.

Watson, N., Wooden, M 2009, 'Identifying factors affecting longitudinal survey response', in P Lynn (ed.), *Methodology of Longitudinal Surveys*, John Wiley & Sons, Chichester, West Sussex.

Wehmeyer, K 2008, 'User-device attachment-scale development and initial test', *International Journal of Mobile Communication*, vol. 6, no. 3, pp. 280-95.

Wei, R & Lo, VH 2006, 'Staying connected while on the move: cell phone use and social connectedness', *New Media and Society*, vol.8, no.1, pp.53–72.

Welsch, W 1996, 'Aestheticization processes: phenomenon, distinctions and prospects', *Theory, Culture & Society*, vol. 13, no.11, pp.1-24.

Werts, CE, Linn, RL & Jöreskog, KG 1974, 'Intraclass reliability estimates: testing structural assumptions', *Educational and Psychological Measurement*, vol. 34, no.1, pp. 25–33.

Williams, RM, Jr 1979, 'Change and stability in values and value systems: A sociological perspective', in M Rokeach (ed.), *Understanding human values*, Free Press, New York, NY, pp. 15-46.

Williams, P & Soutar, GN 2009, 'Value, satisfaction and behavioral intentions in an adventure tourism context', *Annals of Tourism Research,* vol.36, no.3, pp.413-38.

Wold, H 1975,'Path models with latent variables: the NIPALS approach', in HM Blaklock, A Aganbegian, FM Borodkin, R Boudon & V Cappecchi (eds.), *Quantitative Sociology: International Perspectives on Mathematical and Statistical Modeling*, Academic Press, New York, pp. 307-57.

Wold, H 1982, 'Soft modeling: the basic design and some extensions', in KG Jöreskog & H Wold (eds.), *Systems under indirect observation*, North-Holland, Amsterdam, Part II, pp. 1–54.

Wold, H 1985, 'Partial least squares', in S Kotz & NL Johnson (eds.), *Encyclopaedia of Statistical Sciences*, Wiley, New York, NY, vol.6 , pp. 581–91.

Wolff, J 1993, *The social production of art*, 2nd edn, Macmillan, London.

Woodruff, RB 1997, 'Customer value: the next source for competitive advantage', *Journal of the Academy of Marketing Science*, vol.25, no.2, pp.139–153.

Woodruff, RB & Gardial, SF 1996, *Know Your Customer: New Approaches To Understanding Customer Value and Satisfaction,* Blackwell Publications, Cambridge, MA.

Wu, SI 2003, 'Relationship between consumer characteristics attitude toward online shopping', *Marketing Intelligence & Planning*, vol. 21, no. 1, pp. 37-44.

Yamamoto, M & Lambert, DR 1994, 'The impact of product aesthetics on the evaluation of industrial products', *Journal of Product Innovation Management,* vol. 11, no.4, pp. 309–24.

Yang, S & Allenby, GM 2003, 'Modeling interdependent consumer preferences', *Journal of Marketing Research,* vol.40, no.3, pp.282-94.

Yang, K & Jolly, LD 2009, 'The effects of consumer perceived value and subjective norm on mobile data service adoption between American and Korean consumers', *Journal of Retailing and Consumer Services,* vol.16, no.6, pp.502-8.

Yang, X, Zhang, J & Peracchio, LA 2010, 'Understanding the impact of self-concept on the stylistic properties of images', *Journal of Consumer Psychology*, vol. 20, no.4, pp.508-20.

Yu, YT & Dean, A. 2001, 'The contribution of emotional satisfaction to consumer loyalty', *International Journal of Service Industry Management,* vol. 12, no.3, pp.234-50.

Zeithaml, VA 1988, 'Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence', *Journal of Marketing*, vol. 52 (July), pp. 2-22.

Zikmund, WG 2003, *Exploring Marketing Research*, 8th edn, Thomson/ Southwestern , Mason, OH.

Appendices

Appendix 1. Background information

No	Call home	Frequency	Percent
1	Australian	374	90
2	Pakistan	1	9%
3	Bangladesh	1	
4	Greece	2	
5	India	4	
6	Malaysia	5	
7	China	1	
8	New Zealand	3	
9	Philippines	1	
10	Poland	1	
11	Japan	2	
12	El-Salvador	1	
13	Mexico	1	
14	Macedonia	1	
15	Malta	1	
16	England	1	
17	Iran	1	
18	Fiji	1	
19	Cuba	1	
20	Indonesia	3	
21	Srilanka	1	
22	Sweden	1	
23	China	1	
24	Missing	5	1

Appendix 2. The probability of aesthetic items

Measurement items	Likert Scale					Total (%)
	5	4	3	2	1	
AE1	6.3	49.9	42.7	1.2	0	100
AE2	7	47.7	44.1	1.2	0	100
AE4	6.5	43.4	47	1.9	1.2	100
AE5	8.2	41.2	46.5	3.1	1	100
AE6	8.7	36.6	42.2	9.9	2.7	100
AE8	7.5	42.2	43.6	5.5	1.2	100
AE9	7	46	43.6	3.1	2	100
AE11	6.7	26.3	56.4	10.1	.5	100
AE12	6	29.4	52.5	10.4	1.7	100
AE13	7.2	27.2	52.5	11.8	1.2	100
AE15	8.9	49.4	40	1	.7	100
AE16	6.3	45.5	44.6	2.7	1	100
AE17	7.2	43.4	45.3	2.9	1.2	100
AE18	5.3	34	51.8	7.2	1.7	100
AE19	10	34	45.5	9.2	1.2	100
AE20	9.9	29.4	45.3	14.2	1.2	100
AE29	11.8	34.7	43.6	8.4	1.4	100
AE30	10.8	25.1	50.4	11.8	1.9	100

Appendix 3. The probability of perceived value and purchase intention (%)

Measurement	Liker scale					**Total**
Items	5	4	3	2	1	
F1	34.2	53.7	9.9	2.2	0	100
F2	46.3	41.7	10.8	1.2	0	100
F3	34.7	46.3	18.3	.7	0	100
F4	46.3	42.2	11.3	.2	0	100
F5	26.3	44.1	27	1.9	.7	100
F6	50.8	36.9	11.3	1	0	100
F8	34	49.4	16.1	.5	0	100
S1	2.7	10.8	25.3	32.8	28.4	100
S2	1.4	13.7	26	30.6	28.2	100
S3	1.9	10.1	24.8	32.3	30.8	100
S4	1.4	11.3	23.4	32.3	31.6	100
S5	1.7	14	23.6	30.8	29.9	100
S6	5.1	21.2	38.1	19.5	16.1	100
E1	10.8	38.8	38.3	7	5.1	100
E2	8.7	50.4	34	4.1	2.9	100
E3	7	27.7	42.4	14.9	8	100
E4	8.7	47.7	36.9	3.4	3.4	100
E5	8.2	33	40.2	12	6.5	100
E6	4.1	9.9	29.4	27.5	29.2	100
I1	2.7	14.9	31.8	27.2	23.4	100
I2	4.1	20.7	38.8	21	15.4	100
I3	2.7	20.7	35.4	23.1	18.1	100
I4	14	49.6	29.9	4.8	1.7	100

Appendix 4: The final survey

The main objective of the study is to investigate the importance of aesthetics to consumers intending to purchase a smartphone. Specifically, this survey seeks to investigate how perceptions of beauty influence customers in their purchase decision. In completing and submitting this questionnaire, you consent to participate in the study. For the purpose of this survey, a smartphone is a device that lets you make phone calls and texts, but also adds features that you might find on a personal digital assistant or a computer. It also offers the ability to send and receive e-mail and edit Office documents. IPhone, Samsung Galaxy, and Blackberry are examples of smartphones available in the market.

1. What is your age?

- 17 or younger
- 18-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55-59
- 60-64
- 65+

2. Have you ever had a smartphone?

- Yes
- No

3. For how many years have you been living in Australia?

- Less than 5 years
- More than 5 years

4. What is your gender?

- Female
- Male

5. What is the highest level of education you have completed?

- Less than high school
- Completed high school
- Completed vocational training (TAFE)
- Completed University

6. How often do you use different types of applications on your smartphone?

NO	Information	View Point					
		Never	**Seldom**	**Sometimes**	**Often**	**Always**	**Not Applicable**
G1	Office functions such as calender, alarm, appointment reminder						
G2	Internet search						
G3	Using it to access my social network sites such as Facebook and Twitter						
G4	Watching video clips, shows, and movies						
G5	Text messaging						
G6	Camera						
G7	Calls						
G8	Email						
G9	Listening to music						
G10	Using GPS function						
G11	Reading books						
G12	Playing games						
G13	Connectivity like Bluetooth						

7. How much do you spend on different types of application (on average) in each day?

No	Applications	Less than 30 min	From 30 min to 1 hour	From 1 to 2 hours	More than 2 hours	Not applicable	Total
G1	Office functions such as calender, alarm, appointment reminder						
G2	Internet search						
G3	Using it to access my social network sites such as Facebook and Twitter						
G4	Watching video clips, shows, and movies						
G5	Text messaging						
G6	Camera						
G7	Calls						
G8	Email						
G9	Listening to music						
G10	Using GPS function						
G11	Reading books						
G12	Playing games						
G13	Connectivity like Bluetooth						

8. In shopping for a smartphone, assuming the brand name is obscured and leaving aside the price of smartphones (or that the phones you are looking at fall into a particular price bracket you are willing to pay), please answer the following statements. Answers range from “strongly disagree” to “strongly agree.”

No	**Items**	**View Point**				
		Strongly disagree	**disagree**	**Neutral**	**Agree**	**Strongly Agree**
A1	I do not care about the colour of my smartphone.					
A2	Smartphones should come in different colours.					
A3	The colour of my smartphone means a lot to me.					
A4	I should be able to choose a smartphone that is multi-coloured					
A5	A smartphone should have contrasting colours that accent its presence.					
A6	A smartphone should come in bright colours such as red, orange , and yellow					

No	Items	View Point				
		Strongly disagree	**disagree**	**Neutral**	**Agree**	**Strongly Agree**
A7	Smartphones should come in muted colours such as brown, black, and beige.					
A8	The colour of my smartphone should be attention getting.					
A9	The colour of my smartphone should be desirable.					
A10	I should be able to customize the setting or interface of my smartphone the way I want.					
A11	The design of my smartphone based on what is available such as its shape, size, and weight should be unique to me.					
A12	The design of my smartphone means a lot to me.					
A13	The design of my smartphone should					

No	Items	View Point				
		Strongly disagree	**disagree**	**Neutral**	**Agree**	**Strongly Agree**
	be attention getting.					
A14	The aesthetics of my smartphone means as much to me as its technology.					
A15	I like the shape (square, oval, smooth edge) of my smartphone					
A16	The shape of a smartphone should be pleasing to the eye.					
A17	I should enjoy looking at the shape of my smartphone.					
A18	The shape of a smartphone means a lot to me.					
A19	The feel (perception by or as if by touch; sensation) of my smartphone is very important to me.					
A20	The texture of my smartphone means a lot to me.					
A21	The overall appearance of my smartphone means a					

No	Items	View Point				
		Strongly disagree	**disagree**	**Neutral**	**Agree**	**Strongly Agree**
	lot to me.					
A22	I am more concerned with the capability of my smartphone such As playing games or running different programs at the same time rather than its looks.					
A23	The look of a smartphone product can become out dated quickly (the shape, weight, and screen).					
A24	functionality means more to me than the appearance of my smartphone					
A25	I care about the overall look of my smartphone.					
A26	The beauty of my smartphone means a lot to me.					
A27	The weight of the smartphone means a lot to me.					
A28	The durability of my smartphone is very important to me.					

No	Items	View Point				
		Strongly disagree	**disagree**	**Neutral**	**Agree**	**Strongly Agree**
A29	The feel of the surface of my smartphone such as its smoothness is very important to me					
A30	The senses conveyed by my smartphone such as coolness to touch are very important to me					

9. Imagine your desired smartphone. Please rate the extent to which the statements below would apply to you. Answers range from “Strongly disagree" to "Strongly agree".

No	Items	View Point				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
F1	I want a smartphone with a layout, which is easy to follow					
F2	I want a smartphone with the highest reliability					
F3	I want a smartphone with the high degree of functionality					
F4	I want a smartphone which is easy to use					
F5	I want a smartphone which is useful based on its technical capabilities like a powerful processor or running different program at the same time.					
F6	I want a smartphone which					

	is durable in terms of damage protection or battery life					
F7	I want a smartphone with many different software applications for different purposes					
F8	I want a smartphone that is versatile like being good on texting and calling					

10. In shopping for a smartphone, consider the importance of opinion of families, friends, and co-workers/peers in relation to your smartphone choice. Please rate the extent to which the statements below are important to you. Answers range from "Strongly disagree" to "Strongly agree".

No	Items	View Point				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
S1	I seek the approval of my smartphone from my families, friends, or co-workers/ peers					
S2	I seek the acceptance of my smartphone by my family, friends, or co-workers/ peers					
S3	I seek to improve the way I am perceived by my family, friends, or co-workers/ peers					
S4	I seek to impress my family, friends, or co-workers/ peers through the purchase of my desired smartphone					
S5	I seek to buy the smartphone that my family, friends, or co-workers/ peers select					
S6	I seek to buy a smartphone that can be an expression of myself .					

11. Assuming you have bought your desired smartphone, against each statement below, mark the box that captures how you might feel. Answers range from "Strongly disagree" to "Strongly agree."

No	Items	View Point				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
E1	I feel excited when I have my desired smartphone					
E2	I feel relaxed while using my desired smartphone					
E3	I feel good that my smartphone is superior to other smartphones.					
E4	I am happy when I am using my desired smartphone.					
E5	I feel my life is better since I bought my smartphone					
E6	Being noticed by others while using my desired smartphone is important to me.					

12. Imagine your desired smartphone. Please rate the extent to which the statements below would apply to you. Answers range from “Strongly disagree” to “Strongly agree”.

No	Items	View Point				
		Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I1	It is probable that I will purchase my ideal smartphone if it is in the market					
I2	It is certain that I will purchase my ideal smartphone if it is in the market					
I3	There is chance that I will buy my ideal smartphone if it is in the market					
I4	I am likely that I will buy my ideal smartphone if it is in the market					

13. Please indicate which of these descriptions most correctly describes your USUAL occupation:

- Manager or Administrator
- Labourer or Unskilled worker
- Professional
- Technician and Personal service worker
- Community and Personal service worker
- Clerical and Administrative worker
- Sales worker
- Machinery operator and driver
- Trades such as plumber and electrician
- Unemployed
- Home duties (not otherwise employed)
- Retired
- Student
- Other

14. What is your annual income group?

- No income
- Less than 30k
- > 30k- 60k
- > 60k- 90k
- > 90k- 120k
- > 120k

15. What is your country of origin (country of birth)?

16. What is the country you would call home?

17. Do you speak a language other than English at home? Yes No

18. Was your mum or dad born in Australia? Yes No

Appendix 5. Gender difference for the usage of different application

Applications	Gender	1	2	3	4	5	Total
Office function such as calendar, alarm, appointment reminder	Female	169 74.4%	14 6.2%	10 4.4%	5 2.2%	29 12.8%	227 100%
	Male	144 76.6%	15 8%	5 2.7%	3 1.6%	21 11.2%	188 100%
	Total	313 75%	29 7%	15 3%	8 2%	50 1%	415 100%
Internet search	Female	122 53.7%	49 21.6%	14 6.2%	17 7.5%	25 11%	227 100%
	Male	103 54.8%	39 20.7%	19 10.1%	8 4.3%	19 10.1%	188 100%
	Total	225 54%	88 21%	33 8%	25 6%	44 10%	415 100%
Using it to access my social network sites such as Facebook or twitter	Female	95 41.9%	47 20.7%	13 5.7%	16 7%	56 24.7%	227 100%
	Male	84 44.7%	28 14.9%	23 12.2%	10 5.3%	43 22.9%	188 100%
	Total	179 43%	75 18%	36 9%	26 6%	99 24%	415 100%
Watching video clips, shows , and movies	Female	104 45.8%	28 12.3%	12 5.3%	8 3.5%	75 33%	227 100%
	Male	108 57.4%	19 10.1%	13 6.9%	1 .5%	47 25%	188 100%
	Total	212 51%	47 11%	25 6%	9 2%	122 29%	415 100%

Applications	Gender	1	2	3	4	5	Total
Text messaging	Female	149 65.6%	48 21.1%	18 7.9%	8 3.5%	4 1.8%	227 100%
	Male	136 72.3%	26 13.8%	11 5.9%	10 5.3%	5 2.7%	188 100%
	Total	285 69%	74 18%	29 7%	18 4%	9 2%	415 100%
Camera	Female	173 76.2%	28 12.3%	8 3.5%	6 2.6%	12 5.3%	227 100%
	Male	157 83.5%	14 7.4%	6 3.2%	4 2.2%	7 3.7%	188 100%
	Total	320 77%	42 10%	14 3%	10 2%	29 8%	415
Calls	Female	133 58.6%	61 26.9%	16 7%	13 5.7%	4 1.8%	227 100%
	Male	118 62.8%	40 21.3%	17 9%	10 5.3%	3 1.6%	188 100%
	Total	251 60%	101 24%	33 7%	23 5%	7 1%	415 100%
Email	Female	123 54.2%	36 15.9%	19 8.4%	6 2.6%	43 18.9%	227 100%
	Male	103 54.8%	31 16.5%	16 8.5%	6 3.2%	32 17%	188 100%
	Total	226	67	35	12	75	415
Listening to music	Female	101 44.5%	36 15.9%	25 11%	11 4.8%	54 23.8%	227 100%
	Male	79 42%	31 16.5%	17 9%	7 3.7%	54 28.7%	188 100%
	Total	180 43%	67 16%	42 10%	18 4%	108 23%	415 100%

Applications	Gender	1	2	3	4	5	Total
Using GPS function	Female	128 56.4%	27 11.9%	7 3.1%	6 2.6%	59 26%	227 100%
	Male	123 65.4%	14 7.4%	8 4.3%	3 1.6%	40 21.3%	188 100%
	Total	251 60%	41 10%	15 3%	9 2%	99 2%	415 100%
Reading books	Female	85 37.4%	15 6.6%	13 5.7%	4 1.8%	110 48.5%	227 100%
	Male	85 45.2%	11 5.9%	5 2.7%	5 2.7%	82 43.6%	188 100%
	Total	170 40%	26 6%	18 4%	9 2%	192 46%	415 100%
Playing games	Female	98 43.2%	34 15%	19 8.4%	9 4%	67 29.5%	227 100%
	Male	88 46.8%	22 11.7%	21 11.2%	4 2.1%	53 28.2%	188 100%
	Total	186 45%	56 13%	40 10%	13 3%	120 33%	415 100%
Using Bluetooth	Female	110 48.5%	24 10.6%	16 7%	4 1.8%	73 32.2%	227 100%
	Male	97 51.6%	16 8.5%	9 4.8%	7 3.7%	59 31.4%	188 100%
	Total	207 50%	40 10%	25 6%	11 2%	132 32%	415 100%

G: Gender, 1: Less than 30 minutes, 2: From 30 minutes to 1 hour, 3: From 1 to 2 hours, 4: More than 2 hours, 5: Not applicable